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ORIGINAL ARTICLES.

FIBRO- OR SPINDLE-CELLED SARCOMATOUS TUMORS, WITH THE REPORT OF A CASE AND PRESENTATION OF THE SPECIMEN.[1]

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Various names have been employed by modern authors to designate these tumors, and such appellations are commonly expressive of their structural composition or pathological peculiarities. We accordingly find Mr. Paget speaking of them as "recurrent fibroids;" Lebert, as "fibro-plastic tumors;" Müller, "fasciculated carcinoma;" Gluge, "albuminous sarcoma;" Cornil and Ranvier, "fasciculated sarcoma;" Follin, "plasmona;" Bennett, "fibro-nucleated tumors;" Lancereaux, "spindle-celled sarcomatous tumors;" while the same morbid condition is discussed by Billroth under the head of "spindle-celled sarcoma or fibro-sarcoma." These tumors vary greatly in size and may not be larger than a filbert in one instance, while, in other cases, the dimensions occasionally exceed those of the adult human head.

These neoplasms were first described by Lebert under the name of "fibro-plastic tumors." They are very common and may be developed in various regions of the body. They are most frequently found in the skin and subcutaneous structures, but likewise frequently occur in the deep seated connective tissue, aponeuroses, mammary gland, testicles, and also, occasionally, in the muscular tissue. The disease may also originate in the periosteum and by some authors it is thought possible for it to find a starting point even in the endosteum of the long bones. These tumors are never uniform in their external appearance, inasmuch as the form of the growth is commonly dependent on the surrounding tissues, and it is a well known fact that development will go on most rapidly in the direction in which it meets the least resistance. These growths are generally rounded or lobulated and firmly attached to the surrounding tissues, and even a casual examination after their removal, shows them to be firm, tough, and irregular. A transverse section of the tumor having been made, brings into view a pale red, pale pink, or clear grayish-white tissue, and the surface has a streaked appearance as if from the presence of fibrous bands and bundles of fibrous tissue variously arranged, sometimes straight, sometimes curved, at other times parallel or even crossing each other, and occasionally found in concentric layers, similar to that which is observed on the section of uterine myoma. There is not seen, on the freshly cut surface of these tumors, any juice, or at least only a very small quantity of a transparent fluid, but in those tumors which have been left exposed to the air after their removal, until decomposition has set in, it will be observed that if incisions are now made in them, there soon appears on the cut surfaces a whitish, milk-colored fluid, which, however, is less in quantity than that commonly exuded under the same circumstances when some of the other varieties of sarcoma are incised during the stage of decomposition.

The cell formation of the spindle-celled sarcoma is copied very accurately after the spindle-celled tissue of recent cicatrices, as the microscopical examination of these tumors shows that they are made up of a short and narrow spindle-cell with an elongated, roundish nucleus, with or without nucleoli, enlarged in the middle and terminated in two fine points; it is also this peculiar form which has caused them to be compared with the spindle; this peculiarity supplying the explanation why the name of spindle-cell has been given to these elements and the name, spindle-celled sarcoma applied to these morbid growths. The spindle-cells vary greatly in size, and this fact has caused Rindfleisch to designate the spindle-celled sarcomatous growths as the "small spindle-celled sarcoma," and the "large spindle-celled sarcoma." This distinction possesses but little value since all the intermediate sizes are found in our pathological examinations; nevertheless, it may be well to remember that the small spindle-cells characterize a tumor which is more dangerous to life—more prone to return when it has been removed. It therefore seems that the large spindle-cells represent a more favorable condition of the elements—the prognosis is less grave, and consequently from the clinical stand-point, it is not a matter of entire indifference whether the cells are large or small. Besides these spindle-cells, there is frequently found a certain number of round cells, similar to those observed in cases of encephaloid sarcoma. The latter are sometimes very limited in number, whilst, on the contrary, they may be very numerous. In these instances the surgeon is dealing with a mixed form of sarcoma, intermediate between the encephaloid and the spindle-celled.

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

The arrangement of the fibrous bundles in the spindle-celled sarcoma is very simple, the fusiform cells being placed side by side in such a manner that the enlarged portion of one cell is in contact with the slender part of its neighbor, and these are firmly united by an intercellular substance. The uniting, or intercellular substance is hyaline, more firm and less abundant than in cases of encephaloid sarcoma. The vessels in these tumors possess few peculiarities; the larger are observed running in the same direction as the large fasciculæ, but the smaller do not conform to this rule. The tissue of the spindle-celled sarcoma is more dense than that of the encephaloid, and consequently interstitial hæmorrhage is more rare. In the encephaloid variety it has been observed that fatty granular changes, mucous transformation, etc., are frequent occurrences which are not seen in cases of the spindle-celled sarcoma.

It is highly important that sarcoma should be carefully studied in connection with the tumors of the female breast, and although these sarcomatous growths may be either encephaloid or spindle-celled, it is, nevertheless, highly important, from both a diagnostic and prognostic standpoint, that the surgeon should be able to make a differential diagnosis of sarcoma and carcinoma of the breast. This difference consists of well marked pathological characteristics, which I shall attempt to portray in the following diagram.

DIFFERENTIAL DIAGNOSIS OF SARCOMA AND CARCINOMA OF THE BREAST.

SARCOMA.	CARCINOMA.
1. Commonly develops very slowly, especially at first; may remain stationary for years.	1. Commonly develops very rapidly and may terminate fatally within a year.
2. Rough, lobulated, or lumpy; lump may be as large as a hen's egg; tumor finally attaining great size and becoming pediculated.	2. Slightly roughened; no large lobules; tumor usually small and flattened on the chest.
3. Skin involved after a long interval; morbid growth approaches the integument, which is gradually thinned as by an abscess, and also frequently marked with large veins.	3. Skin becomes quickly attached to the morbid growth, is retracted, drawn in, thus giving rise to the appearance of a quilted cover; large veins not seen, but in their stead there may be observed white lines, sometimes called lymphatic varices.
4. Nipple does not retract and is not often changed in appearance.	4. Nipple retracts and its end seems to be absorbed.
5. Ulceration occurs after the lapse of a long period; skin gives way, owing to pressure on its internal surface by the lumps which belong to the morbid growth, but the ulcerated border of the integument is thin, loose and not adherent to the tumor.	5. Ulceration occurs at an early date; skin is invaded by the morbid growth, and destroyed; border is thickened, hardened and adherent to the tumor.
6. Consistence of the tumor varies in the different stages of the disease; first hard, later soft spots may be found, and even liquid parts from the cysts within it.	6. Consistence of the tumor never varies in the different stages. Generally firm.
7. The mammary gland remains distinct from the tumor; consequently it is not destroyed, but simply flattened and atrophied.	7. This morbid growth, from the first, fuses with the mammary gland and soon destroys it.
8. Sarcoma does not become adherent to the deep-seated parts.	8. Carcinoma adheres quickly to the deep-seated parts, especially the pectoralis muscle.
9. Does not involve the lymphatic system in the early stage of the disease, and rarely, even in the late.	9. Involves the lymphatic system in the early stage of the disease, which is always steadily progressive.
10. The morbid growth returns in the majority of cases, commonly in the same organ, and these relapses indicate a finally fatal termination of the disease.	10. The morbid growth will surely and speedily return; usually in some other part of the body and a fatal termination rapidly supervenes.
11. The general health of the patient often remains quite satisfactory, even after the tumor has been removed several times.	11. The general health is quickly impaired, the cachexia becoming very marked in the early stage of the disease.
12. The progress of the disease is rarely attended with much pain.	12. The progress of the disease is attended with severe pain.

Having pointed out the most essential differences between sarcoma and carcinoma of the breast, I shall now consider briefly, the chief characteristics of the former disease in this organ. It should, however, be remembered that while speaking of the morbid growths in the mammary gland, I do not confine myself to the spindle-celled sarcoma, but also include all the varieties of sarcomatous growths found in this organ. I have taken this liberty in order that I might be enabled to draw a dividing line between sarcoma and carcinoma.

The sarcomatous growths found in the breast were designated by Rindfleisch by the following names: cysto-sarcoma fibrosum, cysto-sarcoma mucosum, sarcoma peri-canaliculare, sarcoma peri canaliculare diffusum. The sarcoma which is developed in the mammary gland is accompanied by a proliferation of cells of the lactiferous ducts. Cornil and Ranvier, who have studied very carefully these morbid growths have designated two forms, one in which the sarcomatous tissue is developed in the lobules at those points where the lactiferous ducts are the most numerously distributed, or, as is thought by some, within these minute canals.

In the other form of this disease, the granulating sarcomatous tissue which is supposed to originate within the lactiferous canals, pushes back their walls, extends into them in the form of simple papillæ, which distend these tubes and frequently become attached to them by a narrow pedicle. This growth is distinguished from the former by a more rapid development of the tumor and also by a more luxuriant proliferation of the foliated and papillar excrescences into the lactiferous ducts.

This condition becomes more marked when, besides the distention and distortion of the lactiferous ducts, there is also a collection of mucoid secretion within them, which gives rise to irregular sacs in which fluctuation may be detected, These sacs are the lacunary cysts which are so frequently mentioned by the various authors in their writings on sarcomatous tumors of the breast. Billroth has described this variety under the name of adenoid sarcoma, and many other authors have classified it with adenoid tumors, thus accounting for the fact that many morbid growths, so-called adenoids, have returned after their removal by operation.

The symptoms of the spindle celled sarcoma differ somewhat from those which have been described in the above. This morbid growth, when it makes its appearance in the breast, is commonly indicated by roundish nodules, which have their origin in the connective tissue surrounding the lactiferous ducts.

The pathological and microscopical appearances of the spindle celled sarcoma of the breast is very similar to those presented by the same morbid growth in other parts of the body. Rindfleisch's[1] sarcoma peri-canaliculare diffusum is "an entirely uniform, yet mostly spindle-celled sarcomatous mass, within which the lactiferous ducts are distorted and distended into widely gaping clefts. This tumor also begins in the surroundings of the ducts, thence, however, passes over the entire interstitial tissues." The spindle-celled sarcoma of the skin, where this neoplasm is common, frequently shows itself in the form of a small tumor, a mere excrescence, which soon involves the entire thickness of the integument, and its breadth may exceed its thickness. This growth sometimes ulcerates at an early day, presenting a raw surface, covered with granulations which readily bleed, and soon become covered with a scab which falls off and is renewed from time to time. There is a form of spindle-celled sarcoma which takes its origin in the connective tissue beneath the skin, possessing many of the characteristics of the encephaloid sarcoma, although its consistence is more decidedly firm, occasionally even hard, where one observes fewer blue veins zig-zagging under the skin on the surface of the tumor and about its periphery. The skin, in some of these cases, remains a long time intact, when the disease is primary in its character, much longer than in cases of encephaloid sarcoma. The tumor, likewise, possesses a marked degree of mobility. but should this morbid growth happen to be attached to the aponeurosis it will then become almost immovable. Therefore, when a spindle-celled sarcoma originates in the periosteum it is naturally immovable. In these cases there is felt a mass which seems to be incorporated with the bone, even though only a lateral projection from it, while in other cases it envelops the whole surface of the bone like a cushion.

These tumors are commonly attended with little or no pain. They also develop very slowly, in fact their action is more torpid than that of the spindle-celled sarcoma of the soft parts. It is likewise thought that this tumor, when it has its origin in the periosteum is much more fatal than when it is confined to the soft tissues, a result which may, *in some measure be due* to the fact that owing to the severe character of the operation required to remove the morbid growth it is commonly postponed so long as to fail in accomplishing the object sought. The constitutional infection in the case of any spindle-celled sarcoma unquestionably takes place through the circulatory system, the blood carrying with it the contaminating juices of the tumor while the lymphatic vessels take but little or no part in this morbid process. It therefore follows that there is seldom found an enlargement of the lymphatic glands during any stage of its progress.

The spindle-celled sarcoma destroys life by a contamination of the general system, or by its pressure on important organs. When a spindle-celled tumor is removed, it may without doubt be reproduced, in fact this is the usual course which this disease takes; but in some patients the health remains good in spite of a multiplicity of relapses. Birkett has cited a case in which sixteen operations were performed within nine years, and where the general health remained unimpaired. A fact worthy of mention, but one that is also observed in other kinds of tumors, is the unfavorable action arising from a traumatism involving morbid growths, in which it is not unfrequently the case that an essentially harmless and chronic disease may take on a very rapid and unfavorable action in consequence of a severe blow or concussion. In connection with this statement it is not difficult to comprehend the effect produced by incomplete operations on various tumors, which, by these operations, are caused to take on a high state of activity, frequently with a fatal result; thus a harmless fibro-polypoid growth situated in the naso-pharyngeal cavity, frequently becomes sarcomatous following an incomplete operation for the removal of the primary tumor.

When the spindle-celled sarcoma is reproduced after its removal the secondary tumor may consist of essentially the same texture as the primitive; but there is a marked tendency in these growths to become more and more embryonic in their nature, thus precipitating the progress of the malady. The practical lesson taught by these observations is the avoidance of incomplete operation.

The ganglionic engorgement, which is rarely observed in cases of spindle-celled sarcoma, is merely irritative, and consequently entirely disappears after the removal of the morbid growth. The absence of this ganglionic engorgement is a peculiar characteristic and constitutes a marked difference between the encephaloid and spindle-celled sarcoma, ganglionic infection being rather common in the former, but exceptional in the latter.

It must be confessed that our knowledge of the etiology of the spindle-celled sarcoma is very limited and unsatisfactory. If we can believe statistics, the spindle-celled sarcoma of the soft parts is much more common among women than among men, the proportion being about two to one; but the order of frequency of occurrence in the sexes is reversed when this disease attacks the long bones. This disease occurs in all classes and at all ages, but most frequently in the middle period of life. It is very rare in children; nevertheless a case has been reported by Schwartz in which the disease attacked the tibia in a young infant. There are also reported cases of well-marked spindle-celled sarcoma of the skin which were discovered at birth, and it is also believed that the existence of excrescences or slight defects in the integument present weak points which predispose to this degeneration. In addition to these etiological conditions, there should be mentioned the effects of repeated or continuous irritations, bruises, or contusions which have a definite action in the origin and development of sarcomatous growths, especially the spindle-celled sarcoma. There are in-

[1] A Text-book of Pathological Histology, p. 595, Trans. Phila., 1872.

numerable cases cited in support of the views expressed in the preceding sentence, and it is impossible to deny their importance. It has likewise been clearly shown, that, if a sarcoma which already exists, be subjected to a traumatism, this action may become the cause of much greater activity in the morbid process. Inflammation, suppuration, and other unfortunate complications may now arise in rapid succession, hastening the disease to a fatal termination.

The diagnosis of spindle-celled sarcoma cannot be based on any pathognomonic signs. It is by carefully weighing the symptoms as a whole that we are able to diagnosticate the malady. Even a very careful examination of all the symptoms, in many cases, does little more than supply a serious presumption in favor of its nature, without enabling the surgeon to say positively that the tumor before him is a true spindle-celled sarcoma. Thus when this tumor it developed within an aponeurosis *e. g.*, in the fascia lata or some other fibrous tissue, it is rendered immovable, a fact which, when considered in connection with our knowledge of the nature of this neoplasm establishes a presumption in favor of its character. The same, or even greater difficulty, may be experienced in establishing a correct diagnosis in cases of spindle-celled sarcoma when it takes its origin from the periosteum, where it may be readily mistaken for an exostosis, whilst in other localities the question of an enchondroma may lead to a similar difficulty. In certain organs, the breast for example, the spindle-celled sarcoma may be mistaken for a scirrhus, carcinoma, or even an encephaloid cancer. However, it should be remembered that the spindle-celled sarcoma develops more slowly, that it maintains a more independent existence, does not attach itself so firmly to the surrounding tissues, the skin which covers the morbid growth remains a long time intact; finally, enlargement of the glands in the axilla never takes place in the early stage of the disease, and very rarely even in the late. A small sarcoma in the skin may be readily mistaken for an epithelioma, but, if the subject is young, the age of the subject should be regarded as presumptive evidence in favor of the sarcomatous nature of the growth. It would seem that there should be very little trouble experienced by a surgeon in diagnosticating a secondary sarcomatous growth appearing in a cicatrix following the removal of the primary disease; but even this may at times be very embarrassing. It is well known that a cicatrix may become reddened and thickened at various points, showing hard excrescences which are properly designated as cicatricial keloids, and that these are commonly regarded as inflammatory products. This peculiar growth frequently marks the former site of every suture employed in the treatment of the wound, or more accurately stated, these keloids form on every suture cicatrix. It may therefore become difficult, in some rare cases, to decide whether the morbid development appearing on a cicatrix is really a sarcomatous growth or not, but the surgeon need not long remain in doubt in these cases. The spindle-celled sarcoma will continue to grow steadily, but the keloid will soon come to a perfect halt and finally shrink and shrivel up.

The prognosis of spindle-celled sarcoma, is without doubt, very grave. Abandoned to itself it advances steadily, and ultimately leads to a fatal termination, either by the general contamination of the system, or local organic disturbance of important vital functions. Furthermore, the fact should not be lost sight of that the spindle-celled sarcoma soon returns after its removal, that it may ultimately become constitutional, and likewise multiply in various organs of the body; notwithstanding all this, the prognosis is much less grave than in cases of carcinoma, or even of encephaloid sarcoma, its progress being slower and the surrounding tissues much less rapidly involved.

It is undeniable that the well-being of the patient is served by an early operation. A considerable number of patients on whom operations have been done under favorable circumstances have remained perfectly well for many years and finally died from other causes. The prognosis, whether favorable or otherwise, must depend largely on the locality of the tumor and the performance of an early or late operation—the former giving the patient the better chance for recovery and long life—while the complete removal of the morbid growth gives the highest degree of safety attainable in these cases; therefore any obstacle in the way of the full accomplishment of this object must influence, unfavorably, the opinion of the surgeon in the question of prognosis.

The treatment of the spindle-celled sarcoma is necessarily entirely surgical; and the earlier the operation is performed the better will be the chances of the patient. It should be carefully remembered that every surgical operation, when possible in these cases, ought to be made before there is involvement of the lymphatic glands or impairment of the general health. Another very important rule in the management of these growths is, that *every particle of the tumor should be removed; let not a single morbid cell remain behind;* if a long bone is involved, amputation is the only effectual remedy. This operation should be performed eight or nine centimetres above the apparent limit of the disease, as shown in the bone substance —better still, where practicable, to amputate through an articulation, above the morbid growth, because there is frequently found in the medullary canal sarcomatous cells at a much higher point than in the bone. The performance of the complete operation is recommended by the following observations: First, ganglionic enlargement, when it exists, is promptly relieved by this procedure; secondarily, the contaminating juices stored up in the morbid growth, as well as the danger arising from its pressure on important organs, is completely removed, and the development of constitutional symptoms is postponed. Incomplete operations should not generally be performed; since this procedure accelerates the development of the morbid growth and gives it, in many instances, a malignant character; but there are unquestionably some cases in which the incomplete operation is absolutely necessary and consequently justifiable, thus, impending suffocation caused by a sarcomatous tumor would justify this procedure.

In connection with this paper I desire to report a

case of spindle-celled sarcoma, and, likewise to present the pathological specimen, which, I think, will be accepted as typical of the disease; but my chief interest centres in the complications rather than in the tumor itself.

C. F. H., school boy, æt. 12, born of healthy parents, nervous temperament, somewhat delicate, accustomed to complain of headache while in daily attendance at school, fond of athletic sports but rather easily fatigued, had passed safely the diseases of childhood; health equally as good after an attack of scarlatina, occurring when the child was about 9 years old, as it had been previously. The tumor was discovered by the mother about November 1, 1885. It was then about the size of a goose egg, and was situated posterior to the middle third of the left femur. The patient, notwithstanding the dimensions to which the growth had already attained, had never complained of any pain or other inconvenience that could be attributed to the tumor. The family physician was finally called and continued in charge of the case until the patient died, which occurred Jan. 5, 1886. In this case there was observed, about the 1st of December, a mottled appearance of the integument, covering some parts of the tumor, which at first consisted of a few isolated red spots. These continued to increase in number and also to enlarge their dimensions. Soon there was observed a change in their color—the spots which primarily were red, slowly turning to a bluish-brown, then to a brownish-black; and inasmuch as new spots were continually making their appearance the parts presented a variegated and mottled aspect. These changes in the skin took place without any apparent elevation of the spots above the surrounding integument. I saw the patient in consultation with the attending physician, about the 20th of December. The tumor was then about four-fifths as large as when I removed it, January 4. The entire surface of the integument covering the morbid growth was mottled as already described. The tumor occupied at this time about the same relative position on the thigh as when first discovered by the mother, although it had increased considerably in size.

I did not see the patient again until the day that the operation was performed. The tumor, in the meantime had changed in form (being less oval than it was), had increased in size, and had descended—the upper border being one inch lower than it was when I made my first examination, and the mottled surface of the integument was now three times greater than at my first visit. The superficial veins covering the tumor were not much enlarged. The patient was anæsthetized—a linear incision was made of sufficient length to enable me to remove the entire morbid growth which was found imbedded in the deep connective tissue—its anterior surface approaching closely to the periosteum of the femur, the sciatic nerve passing through one third of its lower portion, grooving deeply the upper two-thirds of the posterior surface.

The operation was speedily accomplished and attended with very little loss of blood. There was some traction made on the sciatic nerve while liberating it from the tumor; it was also slightly incised at one point, and was completely detached from all the surrounding tissues throughout the entire length of the tumor.

The operation was performed under strict antiseptic precautions—the nerve was placed within the wound—drainage tubes introduced and the wound closed with iron wire sutures. The shock caused by the operative procedure was apparently slight and the patient reacted very well; but within a few hours it was observed that the mottled appearance which has been previously mentioned was extending very rapidly over the limb; and within thirty hours after the completion of the operation the gangrene had reached the toes and abdomen. The patient survived the operation about thirty-four hours.

I sent the tumor for examination to Dr. Frank Ferguson, pathologist of the New York Hospital, who reports as follows: "My Dear Dr. Watson: I send you the following statement of the tumor received from your office on Saturday last. The tumor measures, vertically, 12 centimetres; laterally, 8; and in its antero-posterior measurement, 6 centimetres. It weighs 304 grammes. Tumor is lobulated, and grooved in the median line posteriorly, to the depth 2½ centimetres, where it received the trunk of the sciatic nerve.

"It is limited by a delicate fibrous capsule except at the point of attachment of muscles. In these locations the tumor is directly continuous with the fibrous tissue of the muscles. It is composed of numerous small spindle-cells and much fibrous tissue. The vascular supply is abundant and the vessel walls are composed of tumor tissue. Diagnosis: Fibro-sarcoma. Yours sincerely, Frank Ferguson."

The chief interest in this case attaches to the involvement of the sciatic nerve in the morbid growth which unquestionably caused the vaso-motor disturbances and ultimately the gangrene following the operation.

PNEUMONIA IN THE OLD.[1]

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It was formerly taught that the very robust were peculiarly liable to lobar pneumonia. It is now generally conceded that a strong and healthy constitution protects against the disease. Many recent writers have called attention to the liability of persons suffering from cachectic, carcinomatous, diabetic and other chronic exhaustive diseases, as well as those suffering from severe acute diseases, to be attacked with pneumonia. Diett, in his statistics of 750 cases of pneumonia, found only 18 per cent. to have occurred in previously healthy persons. Alcoholism, climate, chilling of the body, and other causes, have entered prominently into the discussion of the etiology of the disease, and some writers have referred to the debility of age as an exciting cause. Day, in his "Diseases of Old Age," published in 1849, gives a

[1] Read in the Section on Practice of Medicine at the Thirty-Seventh Annual Meeting of the American Medical Association

table of "Causes of Death in 1000 persons over 60 years;" 285 died of old age, 79 of bronchitis, 35 of consumption, and only 27 of pneumonia; but in the next page he contradicts this table and says "there is in all probability an enormous error in it," and gives pneumonia the highest per centage of deaths in diseases of the respiratory organs in the old; and gives a table of examinations of bodies of 390 persons who died at the age of 60 or beyond. One hundred and forty-nine of these died of diseases of the respiratory organs, and of this number 77 died of pneumonia, 26 of pleurisy, 18 of consumption, 10 of asthma, 8 of bronchitis, 4 of pulmonary congestion, and 3 from asphyxia. From the time of this book until Loomis's recent work, I have not consulted any author who gives special prominence to senility as an etiological factor in pneumonia.

Jürgensen says: "In the aged the symptoms are often so latent that the disease may very readily be overlooked;" also, "that he who loses many of his patients from senile debility may rest assured that many of these cases have been pneumonia." But in his comments on his English statistics, he says "that from the fifth to the seventy-fifth year the ratios do not exhibit very marked variations." Reynolds quotes Gunsburg's statistics of 5000 cases of pneumonia, which gives the largest number of cases (17 per cent.) between 20 and 30 years of age; next largest (16 per cent.) between 30 and 40; 7 per cent. from 60 to 70, and 11 per cent. from 70 to 80; he observes on these statistics, that the disease is comparatively frequent from 20 to 40, less so from 40 to 60, and very frequent and very fatal after 60 years of age. Aiken does not refer to its frequency in the old.

Quain and Niemeyer speak frequently of the latent form of the disease in the old, and the absence of pronounced symptoms, but nowhere refer to its frequency. Bartholow scarcely refers to it in the old, and Flint says: "No period of life involves either exemption from or a notable proclivity to the disease." His tables comprise none over 60 years, and he only observes that cases are not infrequent after that age. Nathan S. Davis is of the opinion that "It occurs more frequently in middle period of adult life, that is, from 20 to 40 years of age, than either earlier or later in life." Loomis, in his "Practical Medicine," third edition, says: "Some of the most reliable modern authorities state that nine-tenths of the deaths after the seventh-fifth year are from lobar pneumonia." He gives as his own opinion that 90 per cent. of deaths beyond the sixty-fifth year are from this cause, and that it is the most common cause of sudden death in the old. I have not been fortunate enough to find the authorities he refers to, but his statement caused me to look more carefully into the cause of death in the aged members of the institution under my professional care. At the Central Branch National Home for Disabled Volunteer Soldiers, there died last year 289 members at the average age of 60 years. It will be seen that there are here unusual advantages for observing the diseases of the old. It is not intended in this paper to discuss the pathology or treatment, or say much about the etiology of pneumonia in the old, but give some statistics. clinical and autopsic observations. I do not recall a single case that can be attributed directly to exposure, to inclement weather, or chilling of the body. In two or three cases men who were exhausted by a debauch took pneumonia and died promptly. With over 5000 old soldiers belonging to this "Home," it is not surprising that several hundred are of dissipated habits. In scores of cases men have been brought in, thoroughly chilled, who had been lying several hours exposed to winter storms; many have lain out over night, and we have had numerous instances of frosted and frozen feet and hands, but it has been the constant observation of the medical attendants that these men did not take pneumonia. Our cases have usually originated in the barracks or hospital, where the men are well housed, clothed and fed, and, with the exception of indifferent barrack ventilation, their hygienic surroundings are all that could be desired. In the last seven months there have been treated in the hospital, including about 250 permanently chronic cases, 610 members over 60 years. Of this number 63 had acute lobar pneumonia. 36 of whom died, 14 recovered, and 13 still remain under treatment. In the same time there were 53 deaths from all other causes, of persons over 60 years of age: 13 of consumption, 7 of senile debility, 5 of cancer, 4 of valvular disease of heart, 3 of apoplexy, of Bright's disease and exhaustion each 2, and of 17 other diseases each 1. In three of the cases of senile debility pneumonia was suspected in the closing hours. and it may have likewise occurred in some of the other cases and not have been detected where there was no autopsy. I must admit that in the autopsy of doubtful cases pneumonia was discovered in nearly all. In 35 autopsies pneumonia was discovered in 24 cases; 7 cases were double pneumonia, and in 15 different parts of the lung were invaded at different periods; of these 13 showed the disease to have begun at the base of the lung. In four cases only had the stage of gray hepitization been reached, and in no case was there abscess or gangrene.

The latency of the symptoms is the most striking feature in the history of pneumonia in the old. The ordinary symptoms are prominently absent, and the fatal malady will only be detected by the most careful examination. Chill is the ordinary precursor of pneumonia in earlier life. Niemeyer says: "Except in intermittent fever and septicæmia we nowhere encounter chills of equal violence." In the above recorded cases a history of chill was obtained in only five or six. Pain, cough or expectoration were not usually present, and in but a very limited number of cases were they distressing symptoms. A flush of face, slight rise of temperature, some increase of pulse and respiration were found in the majority of cases, but in only a few sufficiently striking to attract attention, if you had not been looking carefully for symptoms of febrile action. The temperature was usually about 100, the respiration rarely beyond 30, and in no case did I observe that distressing battle of the respiratory organs so common, especially in double pneumonia in young persons. In fact, our

patients usually died suddenly and unexpectedly, where there occurred double pneumonia or secondary invasion of a single lung.

Pneumonia has been the final cause of death in patients exhausted from softening of the brain, cerebral hæmorrhage, organic disease of the heart, pyelitis, cancer of the stomach, *fistula in ano*, and other diseases in patients between 45 and 60. My observations so far indicate that persons exhausted from phthisis have a greater immunity from pneumonia than any other class of patients equally debilitated. There are many old persons who have pneumonia of one lobe and are so little ill that they do not send for a physician. Many of our cases have been detected in old men coming to ordinary morning "Surgeon's Call," complaining only of feeling generally unwell. In these cases sometimes another lobe is invaded, and they usually die quickly.

Secondary invasion is often attended with a prostration, almost like shock from severe concussion of the brain. An instance of this: A man, aged 60, apparently in his usual health, went from camp to the city (three miles by train) one morning. At noon he was taken suddenly and violently ill at the house of a friend, and within two hours was sent to the City Hospital. The attending physician reported that he was received unconscious, cold extremities, rapid breathing, temperature 103, and almost moribund. He died within six hours of the attack. Autopsy revealed: Lower right lobe passing into stage of gray hepatization, indicating that the disease had existed here for several days; whole of left lung and middle lobe of right were œdematous and engorged with recent pneumonia. In a limited number of cases we have had stupor, mild delirium, slight elevation of temperature, lasting 24 to 48 hours, without any lung symptoms, when suddenly the lung would be overwhelmed and the patient die between night and morning visits, without attracting enough attention for ward-master or nurse to call a physician. I will give a brief clinical history of two cases, illustrating the fact that it is a common cause of sudden death in the old. It has been, in the last few months, the *most common cause*. Except in pneumonia we have had only two sudden deaths, one from hæmorrhage of the lungs, and in the other the aortic valves were thickened, immovable, calcareous masses.

Case 1.—G. M., a large, well nourished man, æt. 76, in good health (with the exception of feeble, irregular action of heart, with slight apex beat near epigastrium, which had been diagnosticated as dilatation of the heart), had been feeling rather unwell without any pronounced symptoms but general lassitude, was walking to his meals, etc. I carefully examined his lungs on the evening of the 10th and could discover nothing wrong. Temperature 99½. At the morning visit on the 11th the nurse reported the old man restless since five o'clock. His temperature was now 100, pulse 105 and feeble, respiration 28. Complained of distress in epigastrium; no cough, but physical examination discovered dulness over middle and lower lobe of right lung, and scarcely any air entering that part of the lungs. General appearance did not indicate any immediate danger. He was ordered stimulants and beef tea, which he took with relish, rested quietly for an hour, when he raised up, called the nurse, and suddenly expired.

Autopsy.—Almost entire right lung œdematous and engorged with blood. Dilated heart with fatty degeneration.

Case 2.—Patient 78 years old, was exhausted from genito-urinary disease, occasioned by an old stricture. He was able to walk around the ward and ride out in a carriage for an hour on fine days. I saw him at 5 P.M.; he complained that he had some colic, which he attributed to the too sudden arrest of a diarrhœa which had been troubling him for several days. He was sitting up and gave no evidence of being worse than usual. Without carefully examining him I ordered an enema, which was given at 6 o'clock, after which he was reported more comfortable, but continued restless during the first part of the night. He would not allow the nurse to call the physician, as he said, for a little colic. (I might add that he was a man of more than ordinary intelligence.) At midnight he called for the commode, got up, sank back into bed, and almost immediately expired.

Autopsy.—Middle and lower lobe of right lung engorged with blood, which was doubtless the immediate cause of death.

Our patients are all men well advanced in life and more or less disabled by wounds or diseases incident to the exposures and hardships of soldiers in active service.

The records of our Hospital for the last six months show that 48 per cent. of deaths in persons beyond 70 were from pneumonia, and 36 per cent. of those from 65 to 70 were from the same cause. If autopsies had been held in all cases the probability is that the per centage would have been higher. Day, in his old book, says: "It is, I fear, too often the case that in old persons this disease is first detected in the dead-house, and if not sought for there is altogether unrecognized." With modern methods of exploration and diagnosis, there is less excuse for the patient dying with the disease not diagnosticated; but I am convinced that the utmost vigilance of ordinary skill will not always detect the latent symptoms of this disease, which seems so prone to attack the old, especially when weakened by any debilitating cause, and which so often becomes the primary element in producing death, instead of the more chronic, more slowly developing and debilitating malady which invited it.

THE VALUE OF AN ATTEMPT AT ENUCLEATION OF A NEUROMA, WHICH SEEMED TO DEMAND RESECTION OF A NERVE.[1]

BY MOSES GUNN, M.D.,
OF CHICAGO, ILL.

If to my colleagues in the Surgical Section, the resection of a so considerable portion of the trunk of an important nerve as to prevent approximation and suture of the ends is as repugnant as it is to me, I

[1] Read in the Section on Surgery at the Thirty-Seventh Annual Meeting of the American Medical Association.

shall need to offer no apology for the introduction of the following case, which illustrates how completely lost in neoplasm nerve fibrillæ may become without impairment of their conducting function, and, also the possibility, in some instances, of enucleating the adventitious growth, without injury to the nerve.

C. B. H., age 36, admitted to the Presbyterian Hospital on August 10, 1885. Fourteen years ago the patient noticed a small lump on the inner aspect of the right arm at the union of the middle with the upper third, which was firm in structure, movable and painless. It increased slowly in size till two years since, when it had attained about half its present dimensions, which are three and one-half, longest, by two and one-half inches, shortest diameter. Three years ago it began to be tender on pressure, but the tumor itself had been always free from pain except that which had been excited by handling in the various examinations to which it had been subjected. Within the last two years he has experienced increasing pain in the ulnar side of hand extending to the little finger and ulner side of ring finger. The pain is dull and aching, accompanied by numbness, and occasionally by a sharp and burning sensation. Pain, at first, was nocturnal, but has become constant, and so severe as to greatly interfere with sleep. Appetite is good, and his bowels are regular in their action; but the patient is loosing flesh persistently. The tumor is extremely tender to the touch, exquisitely so at its upper portion where the nerve enters the mass. From the lower end of the tumor the nerve can be easily traced as it takes its course towards the notch behind the epitrochlea. Exsection of the mass by nerve resection was advised and consented to.

On August 11, operation was commenced by an incision four and one-half inches in length down upon the mass; the dissection was prosecuted, freeing the tumor from adjacent tissues down to the base and exposing the entrance and exit of the nerve. The nerve fibres became lost in the mass at three-fourths of an inch from upper, (apparently spreading out on the surface) and reappeared at about the same distance from lower end of the tumor. At this step of the operation the thought occurred to me to explore the mass by a longitudinal incision, before resection. I had, a few years previously, enucleated a considerable cyst from the trunk of the median, the fibres of which completely enveloped it. I, therefore, made a slight incision on the surface of the tumor, and at the depth of a couple of lines I found that I could easily separate a capsule of this thickness from the central mass; extending the incision through the whole length of the tumor, I was enabled to rapidly enucleate the adventitia proper from the capsule which was composed, principally, of neoplastic tissue involving and obscuring completely the widely separated nerve fibres. After the enucleation, we had, attached to the bottom of the general wound, from which it had not been dissected, a collapsed bag or capsule, continuous above and below, with the ulnar nerve. In this capsule, except at either extremity, no trace of nerve fibre was recognizable, so completely had such fibre been occulted by neoplastic structure. The wound was irrigated, and was drained by three tubes, one in the capsule and one on either side of it. The wound healed rapidly and kindly, the patient being discharged on September 1, free from all pain and impairment of nervous function in the parts to which the ulnar nerve is distributed.

The enucleated mass was subjected to thorough microscopic scrutiny by Dr. Ochsner, of the Physiological laboratory, and was pronounced "distinctly fibrous."

At this stage of our report we may pause to consider certain interesting features which challenge our attention. A tumor is developed in the centre of a nerve trunk separating the nerve fibrillæ from one another as the mass increases in size. Conservative instinct, so to speak, in life force springs to the relief of the over-strained nerve tissue and effects that relief by recruiting neoplastic tissue which increases with the demand till at the time of our observation the new element outmeasures the nerve, by at least, forty to one, completely occulting the nerve fibrillæ, yet in no wise interfering with nerve function. Conduction in both directions, and pain referred to ultimate distribution, caused by pressure of the tumor, exists. The pressure is overcome by removal of the tumor, pain ceases, function becomes normal, and gradual absorption of the neoplastic tissue takes place. This adaptiveness of nerve tissue to altered circumstances which we here observe, has its parallel in certain forms of spina bifida, where the arrest of development in the vertebral arch is, probably the result of the outward pressure of the sac which has had its origin in the anterior sub-arachnoidal space, and to which, as the sac is developed, the spinal cord becomes attached, spread out and attenuated, and with which it is at last more or less intimately blended.[1] Such attenuation and blending of the chord and nerves with the sac impairs in no way the transmission of nerve force in either direction. Such cases of spina bifida, and the case which I have here related, show that nerve tissues are capable of undergoing gross changes while they preserve their special characteristics and consequently their function.

Of what value this fact may prove to the practical surgeon in dealing with tissues on or in nerves remains to be seen. In the present case the result which immediately followed the operation and which seemed to promise so much, was not ultimately realized. The patient, after enjoying immunity for a time, and engaging in farm labor, returned on the 30th of November, a little less than four months from the operation with a reappearance of the disease in its former site. The tumor was yet small, but the pain had become considerable. It involved the same length of nerve as before, but the tumor was rather less than an inch in diameter. On careful examination and consideration I determined to resect the nerve, which operation I made next day.

An examination of the specimen showed a reproduction of the fibroma, which on splitting the nerve, was readily enucleated, leaving a sac of nerve and neoplastic connective tissue, as after the first operation, only much smaller and with a much less propor-

[1] For anatomy of spina bifida see London Lancet, No. xiii, 1885.—Prof. Humphrey.

tion of new elements. The connective tissue had largely disappeared so that Dr. Ochsner, who made sections of the specimen, says: "The amount of connective tissue is increased, and the nerve fibres are not so near each other as in the normal nerve, but further than this there is no change in the nerve structure."

The question may suggest itself whether a repetition of the former operation would not have been better practice than resection. That such an operation could have been made as readily as in the first instance, there is no doubt; but a neoplasm which recurs after complete removal, is not prone to cease in its habit of recurrence; on the contrary it usually recurs at shorter intervals, thus demanding radical measures. The possibility, however, of enucleation in cases where we should, from the general appearance of the mass, deem it impossible, should be borne in mind, and an attempt in that direction should be made before resorting to the more radical procedure. Such, I think, is the lesson taught by the above case.

Dr. Staples, of Minnesota, inquired if the function was restored after the second operation and resection?

Dr. Gunn answered that function was destroyed by the second operation and that with a hope of restoring it, he had opened the sheath of the median nerve, separating its fibres so as to engraft the distal end of the ulnar nerve upon it, and that the function was being gradually restored; in explanation of this fact, he expressed the belief that the restoration of function in a severed nerve was not necessarily dependent upon the reunion of the particular fibres severed, that the fibres could interchange function, and that function was determined rather by the machinery at the ends of the nerve than by the fibre itself.

A LARGE PHARYNGO-LARYNGEAL FIBROMA—CURED.[1]

BY E. FLETCHER INGALS, A.M., M.D.,

PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE, AND PROFESSOR OF DISEASES OF THROAT AND CHEST, WOMAN'S MEDICAL COLLEGE, CHICAGO.

E. G., farmer, aged 47, was sent to me January 7, 1886, by Dr. Chas. Enfield, of Scranton, Iowa. He was supposed to be suffering from a fibrous tumor of the larynx.

The patient stated that about two years previously he had begun to experience some difficulty in swallowing, which had been gradually increasing until deglutition had become almost impossible, in consequence of which he had emaciated, having lost about fifty pounds, and had become very weak. Recently there had been much difficulty in sleeping on account of choking spells. A few months before I saw him a physician, whose name I did not learn, had removed a portion of the tumor, which, upon microscopic examination, he had pronounced fibrous in character. The patient had experienced considerable relief after the operation, but the tumor had continued to grow and for some months another physician had made ineffectual attempts to reduce its size by means of caustics.

The tumor was not visible by depressing the tongue, but on a laryngoscopic examination I found a large growth filling the laryngo-pharynx and vestibule of the larynx. It rested against the epiglottis in front and rose as high as its upper edge. The tumor completely hid from view all the larynx except the epiglottis; but a welt which ran downward, backward and inward from near the left margin of the epiglottis had so much the appearance of the ary-epiglottic fold that I at first supposed it to be that tissue with the tumor projecting externally and internally below it.

A small ulcer on the upper surface of the growth seemed to have resulted from some caustic applications. With great difficulty I succeeded in getting the epiglottis thrown forward enough to show that the growth was not attached to it.

A small lobe about half an inch in diameter presented on the right side of the larynx, in a position apparently just above and internally to the ary-epiglottic fold. This I secured and removed with little difficulty by the steel wire écraseur.[1]

Bleeding was not excessive, but it prevented further operations at the time. The piece was examined by Dr. A. J. Ochsner, of the Presbyterian Hospital, of Chicago, who pronounced it fibroid in character, though not entirely fibrous. The next day I passed the wire loop of my écraseur carefully between the larger part of the tumor and the epiglottis, and then twisted one side of the loop around the end of the growth and along the posterior pharyngeal wall, and thus engaged a mass which, as it presented in the throat, appeared about an inch in diameter. I pulled the wire taut, securing a firm hold of the growth, and then gradually tightened the loop by means of the milled screw. The growth proved to be so hard that I finally broke the steel wire (No. 5 piano wire) before it was entirely detached; but I loosened the écraseur and fastened to the end of the broken wire a new one, which I succeeded in drawing down about the tumor. The écraseur was then slipped over the wires and its end passed down into the throat. The wires were fastened tightly, and after a few more turns of the milled wheel I had the satisfaction of removing about three-fourths of the entire growth. This was irregularly nodular in form, had a smooth surface, was hard to the touch, and measured 1⅝x⅞ inches in diameter.

There was very little bleeding, and immediately afterwards I could plainly see the ary-epiglottic fold of the left side, and most of the epiglottis, but the whole vestibule of the larynx, with the exception of a very small chink along the epiglottis, was filled with

[1] Read in the Section on Ophthalmology, Otology and Laryngology at the Thirty-Seventh Annual Meeting of the American Medical Association.

[1] The instrument which I use for this purpose is a modification of what is frequently termed Jarvis snare, made for me by Sharp & Smith, of Chicago. It has upon the handle a slide to which the wires are attached, which enables the operator to tighten the loop quickly without the aid of the milled wheel, which is subsequently screwed down to complete the cutting off of the tissue. It has several tubes of different lengths and shapes, any of which may be easily attached to the handle.

a portion of the tumor, which also covered the right ary-epiglottic fold and pressed against the pharynx on that side. The large mass removed at this time was found by Dr. Ochsner to be a typical fibrous growth.

On the day following the operation the whole mass in the vestibule was hidden from view by dark clotted blood. Three days later it had a grayish, gangrenous appearance, and emitted an offensive odor. At this time I succeeded, after one or two attempts, in engaging the mass in the snare and cutting it off. I then found that the vocal cords could be easily brought into view, and that the whole lower and left lateral portions of the larynx were in a healthy condition; but a mass of the growth the size of a large chestnut still pressed upon and partly hid the right ary-epiglottic fold.

The mass last removed measured about three-fourths of an inch in diameter, and its surface to the depth of nearly an eighth of an inch had a gangrenous appearance. This was examined microscopically by Dr. N. S. Davis, Jr., who found it mostly fibrous.

Two days later I removed another piece the size of a chestnut, and at the next sitting was enabled to see the small remnant of the tumor's pedicle, which was about half an inch in diameter and grew from the right side of the pharynx about half an inch below the upper margin of the right ary-epiglottic fold. I removed this with the snare, and subsequently thoroughly cauterized its root with the galvano-cautery.

Three weeks after the first operation the patient returned to his home thoroughly cured, having gained ten pounds in weight.

Dr. Enfield recently informed me that the patient has no signs of a return of the growth. Tumors of this kind are very rare in this situation, though small papillary growths are not infrequently met with at the upper part of the pharynx. The successful operations in this case well illustrate the wonderful adaptability of the steel wire écraseur for the removal of tumors from cavities difficult of access, and the efficiency of the laryngoscope in enabling us to lengthen the span of human life. Without the snare I doubt if the growth could have been removed; without the laryngoscope the snare would have been of no use and this patient must soon have succumbed to his disease.

64 State Street.

CASES IN WHICH IRIDECTOMY PERFORMED FOR GLAUCOMA IN ONE EYE CHECKED THE GLAUCOMATOUS PROCESS IN THE OTHER.

BY M. LANDESBERG, A.M., M.D.,

OF NEW YORK.

Clinical experiences have taught us to regard glaucoma as one of the diseases which, after it has attacked one eye, will, with few exceptions only, sooner or later also affect its fellow. For this very reason, and for the well established fact that in a certain per centage of cases iridectomy, performed for glaucoma in one eye, is apt to be followed by the sudden development of acute glaucoma in the fellow-eye, which had not shown before any symptom whatever of the disease, Fienzal felt justified in proposing preventive iridectomy on the healthy eye in every instance when the other had to be operated upon for glaucoma. Abstraction made from all other objections against such a far-reaching proposition, I emphatically am at issue with the latter, as my observations tend to show *that there are cases in which iridectomy successfully performed for glaucoma in one eye may check the glaucomatous process and bring about permanent recovery in the other, which has not been treated.*

I am perfectly aware that I have to deal with a subject which has no counterpart in the whole ophthalmic literature, and which seems to have escaped the notice of the most prominent oculists, as I had occasion to learn from the personal intercourse with the latter during my recent trip through Europe.

In the following cases I record facts as they have occurred to me in my practice, and which I have studied with the careful attention and the unbiased mind so as to exclude any possible source of error. The cases are as follows:

Case 1.—Mrs. K., 63 years of age, presented herself *with a typical acute glaucoma* in her right eye. The left eye showed ocular tension pathologically increased. Pupil sluggish and slightly dilated. Anterior channel shallow. Spontaneous arterial pulsation and pronounced venous engorgement of the retina. Emmetropic refraction with vision $\frac{5}{20}$. Near point greatly receded. Marked loss of sensibility to light in the peripheric parts of the upper inner quadrant of the visual field. The eye had remained healthy until seven months ago, when it experienced for the first time the phenomena of a colored halo around a flame, and obscuration in the visual field, which are the pathognomonic symptoms of the prodromal stage of the glaucomatous process. The attacks were at first transitory and recurred after long intervals of perfect health, but in the last weeks they have become more frequent and of longer duration. For the last few days, since the outbreak of acute glaucoma had taken place in the right eye, a sensation of pressure and tension has become permanent in the left one.

Iridectomy successfully performed upon the right eye had the effect to influence in the most favorable manner the condition of the left eye, the complete restoration of which was accomplished in the second week after the operation. No morbid alteration whatever remained, no relapse occurred, and no morbid sensation was ever experienced by the patient during a further observation of eight years and a half.

Case 2.—Mrs. B., 49 years of age, came under my notice with the following condition: *Right eye*, typical acute glaucoma. *Left eye*, ocular tension increased; pupil slightly dilated, very sluggish; anterior chamber shallow; cornea hazy; background of the eye veiled; pulsation of the retinal arteries easily produced by pressure on the eyeball; marked venous hyperæmia of the retina; with the naked eye vision $\frac{1}{50}$, with the help of concave 18 vision $\frac{1}{30}$; light perception dulled in the peripheric parts of the upper

half of the visual field. The subjective complaints are: Pressure and tension in the eye, and perception of flashes of light and of fire-balls in the visual field. No similar attacks had preceded, and only the appearance of colored halos around a flame, with temporary cloudiness in the visual field, have been experienced during the last month.

I performed iridectomy first upon the right eye, with perfect success, deferring the operation upon its fellow for the next day. During the interval such a marked improvement took place in the left eye that I did not feel justified in proposing the intended operation, to which patient would hardly have consented. The restoration of the left eye to normal condition and refraction was accomplished on the third day after the operation. The result remained permanent during a further observation of nearly eight years.

Case 3.—Merchant D., 53 years of age, applied to me with sub-acute glaucoma in the right eye. The left eye showed: M. $\frac{1}{9}$, S. $\frac{12}{30}$. Field of vision normal; pupil sluggish, slightly dilated and somewhat irregular; ocular tension increased; marked venous hyperæmia of the retina; veins dark and tortuous. The prodromal attacks of glaucoma have repeatedly occurred during the last six months, and vision has slightly decreased in the last weeks.

Iridectomy successfully performed on the right eye had the effect to bring about complete restoration in its fellow. All functions became normal and remained in this condition during a further observation of five years.

Case 4.—Mrs. L., 47 years of age, somewhat prematurely old, emphatically denies having ever had any trouble with her eyes until the day before, when, a few hours after great mental trouble had preceded, symptoms of inflammation suddenly developed in her left eye, which were accompanied with rapid loss of vision. After the paroxysm had somewhat abated by topical and internal remedies, patient noticed that a morbid change had also taken place in the right eye. About fifteen hours after the attack I ascertained the following condition: *Left eye*, acute glaucoma, with intense symptoms of inflammation. *Right eye*, slight pericorneal injection; central haziness of the cornea; pupil sluggish and somewhat dilated; ocular tension increased; background of the eye veiled and markedly hyperæmic; arterial pulsation effected by pressure upon the eyeball; one upper venous branch excessively tortuous; vision greatly diminished.

I proposed iridectomy on both eyes, but was only allowed to have it performed on the left one. The operation was followed by immediate relief in either eye. The next day showed the right eye absolutely free from any morbid alteration and vision, according to the statement of the patient, as good as ever before. Normal conditions and functions were ascertained on subsequent examination. The result remained stationary during a further examination of nearly five years.

Case 5.—Mrs. S., 58 years of age, came under my notice with subacute glaucoma in her right eye. The left eye presented the following condition: Hm. $\frac{1}{15}$, vision from $\frac{10}{15}$ to $\frac{10}{12}$; no power of accommodation; perception of light diminished in the upper peripheric parts of the field of vision; refracting media normal; pupil sluggish, slightly dilated; ocular tension pathologically increased; marked venous hyperæmia of the retina. Periodical obscurations, perception of flashes of light and of colored halos around a flame have repeatedly occurred during the past few weeks

Full recovery took place in the left eye after iridectomy had successfully been performed on the right one. The result remained stationary for thirteen months, when the old complaint reappeared after a relapse had occurred in the right eye. Sclerotomy made upon the latter had a beneficial effect upon either eye. Normal functions were restored in the left eye and were maintained during a subsequent observation of nearly five years.

40 W. 34th Street, New York.

MEDICAL PROGRESS.

CIRCUMCISION UNDER COCAINE.—DR. E. R. PALMER, of Louisville, says that, desiring to perform circumcision under cocaine, he determined to use Corning's method of sequestration. "The patient, a young man, 20 years old, with a complete congenital phimosis, was seated in a chair, and the penis was seized by my assistant and drawn upon firmly. A Martin bandage, seven-eighths of an inch wide and a yard and a half long, was next applied, the first turn being made behind the scrotum to prevent slipping, and the bandage being then wound tightly back and forth from the symphysis pubis to the corona and back again. An ordinary hypodermatic syringe was next filled with a 6 per cent. solution of cocaine, and the needle, directed toward the extremity of the penis, was passed at four different points through the skin over the glans, a fourth of the contents of the syringe being discharged each time into the subcutaneous tissue. No attempt was made to introduce the drug from the mucous surface. In about three minutes I began adjusting a Rogers clamp, occupying as many more minutes in getting it placed to suit me and screwed down. The prepuce was removed with one stroke of a pair of long curved scissors, and the clamp removed. The dorsal artery was found not bleeding; the frænum was not cut. The mucous membrane was split up, and some eighteen sutures leisurely introduced. The bandage was now removed and, contrary to expectation, no hæmorrhage ensued. Less than a drachm of blood was lost during the entire operation. The wound was dressed loosely with absorbent cotton wet with equal parts of listerine and water. Not a twinge of pain was felt after the last needle-puncture had peen made. The young man, of nervous temperament, was at first quite pale, but later assisted in the stitching, and as he washed his hands after the operation remarked that his penis still felt dead. The wound healed in forty-eight hours by first intention.

"The advantages of the bandage are several: It wholly controls bleeding, it localizes the action of the

cocaine, and it increases the facility with which the penis can be handled during the operation. The reverse direction for application, that is, from behind forward, will be found the best, because the easiest, and fully effectual."

Dr. Palmer adds that he performed the operation a second time in the same manner with equally good results as regards anæsthesia. But the continuous suture was used, and although perfect coaptation was accomplished, some trouble was experienced later from swelling and from syphilitic induration of the parts. It was attempted to remove the suture, but this was found impossible, and the writer thinks it would have been better had interrupted sutures been employed. The case is now doing quite well, however, and the result will be good.—*Medical Record*, September 25, 1886.

TREATMENT OF WHOOPING-COUGH BY NASAL INSUFFLATION.—In an extensive epidemic of this disease, in February of this year, which was particularly prevalent among very young children DR. GUERDER treated his cases, at first, by disinfecting the sick rooms with carbolic acid and then using a syrup composed of

Syr. diacodii,	
Syr. belladonnæ, aa.....	gr. 50.00
Acidi phenici.....	.50
Potassii brom.....	4

This was administered in doses of a coffee spoonful once or several times a day, according to the age of the patient. Only a moderate degree of success attended this treatment, and when the medicine was suspended the number of paroxysms became as great as before. The continued use of belladonna was also found very undesirable in young children, as it produced decided dilatation of the pupil, delirium, and a condition of narcosis which it was deemed imprudent to continue for long periods of time. The nasal catarrh which accompanied the disease, the injection of the nasal mucous membrane, and the probable parasitic character of the disease suggested the idea that the paroxysms of cough and asthma were of a reflex character, and might be susceptible to a similar course of treatment to that which has been found efficient in hay fever. A powder was therefore made of equal parts of boric acid and burnt coffee, and blown upon the nasal mucous membrane morning and evening. Thirty children were thus treated, seven being under one year of age, seven between one and two, six between two and three, ten between three and eight. Seventeen of these received almost no treatment except the insufflations, while the others had already received some benefit from the use of the syrup, the formula of which has been given. In all the cases benefit began to be apparent in from two to six days, the paroxysms of coughing becoming less frequent and less intense, the vomiting, the epistaxis, and the nasal catarrh diminishing or disappearing. The general condition also improved, and in fifteen or twenty days the patients were apparently well. This result is the more satis factory since the cases occurred among poor people surrounded by bad hygienic conditions, and the children were out of doors much of the time in cold and wet weather alike. In those cases in which the insufflations were practiced at the beginning of the disease, the course was invariably a mild one, and a cure was effected in eight to fifteen days. Powdered benzoin which was recently recommended by Michael, of Hamburg, for this disease, to be used also by insufflation, gave good success, but not so satisfactory as the mixture of pulverized boric acic and pulverized roasted coffee.

DR. J. BACHEM, of Bonn, has treated sixteen cases by blowing into the nostrils a mixture of quinine muriat (3 parts) and pulv. acaciæ (1 part) once or twice daily. Three weeks was the average time of cure.—*Archives of Pediatrics*, August, 1886.

MICROSCOPICAL DIAGNOSIS OF A NEPHRO-INTESTINAL FISTULA.—Nephro-intestinal fistulæ are certainly rarer DR. R. WERNICKE, who publishes his observations in the *Anales del Circulo Médico Argention*, has only met with three cases in literature, and so believes his to be the fourth. In May last he was asked by Dr. Montes de Oca to examine a sample of urine in a flask. The color was yellow and there was some turbidity, also a copious yellow sediment containing grey clots of irregular shape. The reaction was alkaline, and the liquid after filtration contained albumen. The turbidity was evidently due to putrefactive microbes and leucocytes. The sediment on microscopical examination showed the presence of leucocytes, red blood-corpuscles, vesical epithelium, caudate or pyriform epithelial cells from the pelvis of the kidney, granular casts, particles of fatty matter (highly refracting and of a yellow tint), quantities of small aggregations of granules (highly refracting, some of the granules being attached to one another, and some surrounded by a yellow, structureless envelope, being in fact coagulated milk); and lastly, a number of striated muscular fibres, stained with biliary pigment, the striæ being more or less obliterated, according to the stage of digestion which had been reached. As there was no question that the whole of the contents of the flask had been passed from the urethra of a man, there could be no doubt that a communication existed between the urinary and digestive passages. The cause of this ulceration was also diagnosed by further microscopical examination of the sediment, which revealed the existence of tubercle bacilli, which were so clearly recognized both by their form and their behavior with reagents as to leave no doubt in Dr. Wernicke's mind of their precise nature. The case not being under his care, no clinical details are given. It is seldom, however, that the microscope alone enables so much of a diagnosis to be made in a rare and intricate case such as this.—*Lancet*, August 21, 1886.

NARCEINE FOR INFANTS.—LABORDE reports that in many diseases of children narceine is superior to morphine. It induces sleep and diminishes bronchial secretion. It is very advantageous in whooping-cough and nocturnal coughs. As an analgesic it has not the power of morphine. It is administered in syrup or in suppositories.—*Journ. de Méd. de Paris*, July 25, 1886.

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SATURDAY, OCTOBER 16, 1886.

THE TRANSMISSION OF YELLOW FEVER BY MOSQUITOS.

In the *American Journal of the Medical Sciences*, of October, 1886, is a most interesting article on this subject by DR. CHARLES FINLAY, of Havana, who is already known to readers of Spanish medical literature as having contributed some interesting articles on subjects connected with yellow fever. Five years ago he put forward the view that whereas yellow fever is not spontaneously transmissible by infection through the air nor by contact, it can be communicated by inoculation; and in searching for a natural agent capable of communicating the disease by inoculation he fixed upon the Culex mosquito, which is common in Havana, as the most likely agent. This insect has also been described as the Culex fasciatus. "Although great differences are observed in the duration of the successive phases of development of the Culex the following may be taken as a fair average: Every mosquito that stings may be considered as a fecundated female, and will probably lay eggs within a few days after its bite, provided it can find water upon which to lay them. In water-jugs standing in bedrooms, the insect is often found depositing its eggs either on the sides of the jug or upon the water. The eggs are commonly hatched, producing minute wrigglers, between the second and fourth day, in summer; some are delayed much longer, and those that are deposited outside the water may remain a long time in the dry state without losing their vitality. The wrigglers grow more or less rapidly according to the nutritive material contained in the water, the temperature, etc., but they probably pass into the pupa stage within twelve or fourteen days. This stage is always short, not lasting more than two or three days, the fully developed mosquito emerging from its aquatic case a fortnight or three weeks after the egg was laid." This much natural history seems necessary to a proper understanding of how one infected mosquito conveyed to a healthy place, if the temperature and altitude be suitable, might, on Dr. Finlay's theory, inoculate the disease on a healthy subject who might be bitten by it, "and, according to the usual rate of incubation, at the end of a fortnight or three weeks, the consequent attack of yellow fever would be at its height. In the meantime the imported insect would have produced a whole brood of its own species, probably in the vicinity of the place where the patient is lying; thus providing the necessary conditions for the subsequent propagation of the disease."

From careful investigations and experiments Dr. Finlay finds that the insect under consideration, when suddenly transported to heights above 3,000 or 4,000 feet, must find it difficult to exert its functions, and that it would never, of its own accord, seek elevations which render its flight difficult." From his experiments he finds it probable that the limits of functional activity for this insect (the Culex fasciatus) are: as regards temperature, between 60° and 100° Fah., though it will revive after having been chilled to 32°, or warmed to 105° F.; as regards altitude, from the level of the sea to 3,000 or 4,000 feet. "Now the limits which most observers assign to the propagation of yellow fever are temperatures ranging from 60° to 90° F. ('Barton's Reports,' 1852, pp. xiii and 283); a general temperature of 32° F. having, however, proved ineffectual to prevent the recurrence of the disease (in the case of the 'Plymouth'), when a tropical temperature was produced. As regards altitudes, the highest limit at which it has been observed seems to be 400 feet above the level of the sea." There are some mosquitos which are entirely nocturnal, and these necessarily lead a more stationary existence than those which come out in the day, as the latter often have to follow an intended victim from the house, or to some distance in order to accomplish their object. When it succeeds in stinging a person it will generally take up its quarters at that place, as its digestive act may require two days or more, and will there lay its eggs.

For a further comprehension of this subject it is well to say that the sting of the Culex mosquito is a slender hollow needle from $\frac{1}{30}$ to $\frac{1}{40}$ mm. broad and 2 mm. long, with its sides roughened by a series of transverse ridges and its point armed with teeth. "This needle penetrates through the skin until it

reaches one of the capillaries of the corium, generally to the depth of 1 to 2 mm., remains in position during a space of from one to five minutes, and, after being withdrawn, will continue protected by its sheath until the insect's next bite. I have been able to prove that the sting often retains spores of microscopical fungi, which may be made to develop by keeping the proboscis in a sterilized cell, and I once found upon the side of the sting a finely developed bunch of spores like those observed in yellow fever blood cultures by Dr. Sternberg, . . . whence it is to be inferred that it may likewise retain upon its outer surface or inside of its sheath, such minute disease germs as are generally believed to occasion most of the zymotic diseases. If so, the sting of the mosquito having been impregnated with the animal juices during the operation of stinging, may constitute an appropriate soil for the preservation or even for the culture of those germs; might it not, indeed, be the 'intermediate host' necessary for some phase of their development?"

Dr. Finlay's account of his inoculation experiments is very interesting, and it is to be regretted that he had not more time at his disposal, and more yellow fever patients and mosquitos—for, strange as it may appear, the two last are not always to be readily obtained at the same time, even in Havana. Twenty-four persons have been inoculated by him since June, 1881. One of these has died of yellow fever: he was inoculated in November, 1883, without any visible result, and was attacked in June, 1884, with a malignant form, which was the result of contagion. Two of those inoculated left the country and were lost sight of the first summer after the inoculation. Twenty-one remained under observation for from one to four full summers. Six were followed, within from five to twenty-two days, by an attack of fever, the exact counterpart of mild attacks of yellow fever, and which were proved afterwards, by observation, to have conferred immunity. Eleven inoculations, though not followed by morbid manifestations within the limits of incubation, appear likewise to have conferred immunity. In four cases, not followed by immediate manifestations, a mild attack of yellow fever was observed at the end of several months. It is upon the six successful cases that he relies in order to prove the aptitude of the Culex mosquito for transmitting yellow fever. "If this be once admitted, it must follow that the disease is actually so transmitted, since it must constantly happen, in a place like Havana, that unacclimated subjects are stung by mosquitos which have previously bitten yellow fever patients." Dr. Finlay concludes that while yellow fever is incapable of propagation by its own unaided efforts, it may be artificially communicated by inoculation, and only becomes epidemic when such inoculations can be verified by some external agent, such as the mosquito. A careful study of the habits and natural history of the mosquito shows a remarkable agreement with the circumstances that impede or favor the transmission of yellow fever. From Dr. Finlay's observations, and information, the disease is incapable of propagation wherever tropical mosquitos do not or are not likely to exist, ceasing to be epidemic at the same limits of temperature and altitude which are incompatible with the functional activity of this insect; and it spreads readily wherever they abound. Hence he thinks it may be inferred that these insects are the habitual means or agents of its transmission; though, of course, there may be other factors. It is at least a remarkable coincidence, if nothing more, that in the summer of 1885 mosquitos, especially the diurnal species, were scarce in Havana, but became more numerous during the autumn months; and there was a remarkable scarcity of yellow fever cases during the summer months, which were unusually hot, but the cases became more numerous in October and November, in which the weather was rather mild. Dr. Finlay's paper is worthy of great attention, especially in view of the proposed Yellow Fever Commission, which, it is to be hoped, will thoroughly investigate the subject.

THE HAIR AND TEETH OF THE FUTURE.

There seems to be an inherent morbid tendency in some people which leads them to frighten their fellow men. Every little while some one appears on the literary horizon and frightens us into hysterics by predicting something awful that is to happen to our thirty-fourth century descendants. Scarcely do we recover from some professor's prediction as to the fate of American medical colleges and doctors before those of us who are so unfortunate as to be subject to malaria sink in a sea of despondency because we are told that the *bacillus malariæ* and the *phylloxera scientiæ* are one and the same. The rigor caused by this news has scarcely passed into the febrile stage before a monster earthquake is predicted.

And now come MR. VIRGIL G. EATON and DR. WILLIAM A. HAMMOND to tell us that our descendants (of some time about the year 3500) will be innocent of hair and teeth. We cannot dismiss this prediction by asking "How do you know?" Inasmuch as they have declared that such will be the case we must, of course, believe that they have some se-

cret and special information on the subject; that they have been to the roots of the matter (of both hair and teeth), and have obtained facts which cannot be controverted. After having such aspersions cast on our thirty-fourth century posterity, it is all the more galling, to those who retain their hair and teeth, that these writers should insinuate that baldness and toothlessness are the results of higher education and cultivation, and advanced civilization. And to those who live in the West the dregs of this cup of bitterness will be found in the following sentence: "Bald-headed men are most plentiful in New York and Boston. After these come Philadelphia, Washington, and the Western towns."

Will this be an unmitigated evil to posterity? The dental colleges will then live only in history, and the barber, like Othello, will find that his "occupation's gone." The medical literature of that day will perhaps contain a short reference to a disease mentioned in the infant history of medicine as "Toothache;" and doubtless some medico-historian will show that its disappearance from the earth was caused by a change in the meteorological conditions of the planet in the year 2900. The Professor of the History of Medicine will no doubt lecture learnedly on the fatal affection of the nineteenth century known as "dentition," and will ascribe its disappearance to improvements in sewer pipes and house drainage. He will look up *alopecia* in the medical dictionary, and finding that it is so called because *foxes* were supposed to be afflicted with it, will marvel greatly that even so late as the twentieth century the doctors could not cure *fleas*. The archæologist will perhaps find an old toothbrush, and straightway construct the wondrous animal which possessed such a tail. And what a very treasure it will be to him when, in excavating the site of an ancient barber-shop, he finds a bottle with the curious inscription: "Scalpine; positive cure for baldness." Perhaps some daring scientist will try some of it on a cubic centimetre of his own glossy scalp—and regret it the remainder of his days. False teeth, teething rings and hair-pins will be deposited in honorable positions in museums. No doubt Paracelsus will then get the credit of having invented the dental engine, and given it a name which, like many others of the nineteenth century, has no signification, and no other merit than length. In that day an infant King of Spain will not have a dentist appointed for him before he has taken leave of the last three inches of his umbilical cord. Roast beef will be a thing of the past, and the Earth will be dotted over with mush factories.

May we not, therefore, accept this fate of posterity with perfect resignation? After all, the prospect of our thirty-fourth century descendants rising up and reviling us for having worn hats and cooked our food will not fill us with dismay—for it is asserted that such will be the causes of their baldness and toothlessness. It is entirely possible that in that day and generation there will be no need for hair and teeth; and if some one then living chances to find in the *Medical Record*, of October 2, that "Mr. Eaton's curious observations tend to confirm the view that the per cent. of baldness is in direct proportion to the amount of education and cultivation," it will probably be considered "bad form" to be guilty of one single hair. To show that Mr. Eaton and Dr. Hammond are not far from the truth, the foreign journals announce that President Grévy, now almost 80 years of age, lost his first tooth a few weeks ago. Possibly the heraldry of that day will be somewhat changed, and some blue-blooded doctor will proudly wear on his gynecological case the inscription: *On a scalp hairless, a decayed molar rampant.*

THE PNEUMATIC CABINET AGAIN.

Some weeks ago, in an editorial article on the Pneumatic Cabinet, we suggested that the rental of the Cabinet was too high for many physicians who might be perfectly competent to use it intelligently, and that there was no good reason why the Cabinet should not be sold outright to those who could furnish satisfactory assurance to the Board of Managers that it would not be used in an unprofessional manner. We have just received a communication from the Pneumatic Cabinet Co., saying that, mainly on our suggestion, the Directors have determined to sell the instruments. During the early period of its existence and trial of test and experiment, the possibilities for misdirection of the instrument, and perhaps fatal injury, made it necessary that the greatest caution should be exercised in selecting those who should bring its merits and demerits before the profession. The Directors now say that no reason for a restrictive policy remains, and they have resolved to accept our editorial suggestions, and sell the Cabinet. We will now further suggest that the same caution be used in selling the instrument as was used in renting it. It has been but a short time since a daily paper of this city contained an interview with a professor of *chemistry* in a Homœopathic college, who claims to have one of these machines, and manages to pose before the public as the next thing to a raiser of the dead. Whether he really possesses the instrument under consideration we do not know; but this shows that

some people should not be trusted with the instrument.

Our editorial comment of a few weeks ago was not written with the purpose of bringing the instrument into disrepute, but to bring about just what the Directors have determined to do. Now that they have taken this course, and if the price of the Cabinet be within the reach of men of moderate means, there is no further cause for complaint. As we have said before, we believe this instrument to be a very valuable addition to therapeutics. No claim has been made for it that it will cure every or many diseases. It has been honestly investigated by competent men, and its dangers as well as its advantages pointed out. In the hands of a careless or incompetent person it may do very great injury, but this is no more than may be said of any therapeutic agent. Under these circumstances, and so long as the Directors wisely restrict its use to reputable physicians, not advertising it to the public, it deserves the careful attention of reputable physicians. It has been objected to it that it was not invented by a professional man, and that it is made under a patent. The same objections, which are not objections, could be brought against other articles in constant use by physicians in the practice of their profession.

MILK INSPECTION IN CHICAGO.

On Tuesday, October 12, Health-Commissioner DeWolf, of this city, put in effect an order, which he had previously issued, prohibiting the sale of milk from infected distillery sheds. Besides the presence or danger of pleuro-pneumonia in these sheds, those who have looked into the matter assert that the distillery sheds are in a most filthy condition. And beyond the question of the presence of disease in the sheds, the swill milk business, which has existed in Chicago, is illegal and criminal. There are two Sections (1410 and 1731) which are sufficiently explicit in this matter. The former prohibits the keeping or selling, bringing or sending into the city swill milk, or milk from cows or other animals that for the most part have been kept in stables or that have been fed on swill, or milk from sick or diseased cows or animals. The latter Section provides that "Milk produced from sick or diseased cows and all milk obtained from cows kept in distillery yards or pens and fed on distillery slops or waste shall be deemed impure and unwholesome." And further than this, the Health Department of Chicago is vested with authority to abate the filth of distillery sheds.

There is nothing, in the way of food, that has such a direct bearing on the health of the community as the purity of milk. The fact that a large number of persons have their fortunes invested in the business of distributing impure milk has no bearing on this question. If they suffer loss from being in an illegitimate business they have only themselves to thank, and their money should not be placed in the scale with the lives and health of hundreds or thousands of people who subsist wholly or in great part upon milk.

SOCIETY PROCEEDINGS.

AMERICAN GYNÆCOLOGICAL SOCIETY.

The Eleventh Annual Meeting, held in the Hall of the Johns Hopkins University, Baltimore, Md., September 21, 22, and 23, 1886.

(*Concluded from page 417.*)

TUESDAY, SEPTEMBER 21, FIRST DAY.

AFTERNOON SESSION.

DR. T. ADDIS EMMET, of New York, read a paper entitled

PELVIC INFLAMMATIONS; CELLULITIS VERSUS PERITONITIS.

In this country, the term cellulitis has come to signify pelvic inflammation without reference to the special form, but its origin is supposed to have been in the connective tissue. So close is the relation between the connective tissue and the peritoneum, that it seems impossible for inflammation to be present in one without affecting the other. There are situations, however, as between the uterus and bladder, and between the uterus and rectum, where cellulitis might exist without involving the peritoneum. Inflammation in these situations tend to resolution and so the tissues soon regain their healthy condition if supperation does not take place. After septic poisoning, the peritoneum rapidly becomes inflamed and adhesions occur, the circulation in the blood vessels becomes more or less obstructed and the action of the absorbents is greatly impeded. Finally a condition is produced which remains long after the symptoms have subsided and one not prone to change or amenable to treatment. In such cases a fresh attack is provoked by slight causes.

It has been objected that when the abdominal cavity is opened for the removal of the ovaries, very slight evidences of inflammation are found. In a recent case I expressed the opinion from the vaginal examination that a thickened and shortened left broad ligament would be found, at the operation no broad ligament was found, but there was an enlarged tube lying against the side of the vagina. Similar cases have been noted. I should explain these cases in this way. If there is an inflammation between the folds of the broad ligament, it must involve the peritoneum. As a result of the inflammation, the con-

nective tissue disappears and adhesion of the opposing surfaces takes place. The broad ligament is flattened out so that Douglass' cul-de-sac disappears on that side. The vaginal wall is raised up so that it and the tube lie in contact. This is the condition found by the surgeon when he operates for the removal of the diseased fallopian tubes. In all these cases I feel satisfied that there has been inflammation of the connective tissue. I think that the inflammation has been secondary to the cellulitis in every instance except where the primary inflammation was the result of gonorrhœa. If my observations are correct they would prove that the connective tissue never regains its integrity after having been once inflamed. If the surrounding tissue has restored the loss the part will return to its normal condition. If the loss can not be replaced, nature can only repair the injury by a process of adhesive inflammation of the parts involved.

I have used the term thickening of the broad ligament, but I have not meant to imply that there is a deposit of lymph between the layers of the broad ligament. The enlargement is I think due to the dilated state of the veins. The condition is one easily aroused to activity.

It is still a moot question as to the way in which the tube has become involved where gonorrhœa is not the cause of the inflammation. In septic poisoning after surgical injuries, I believe that the connective tissue of the veins and lymphatics first become involved and that the inflammation of the peritoneum is secondary. There is no evidence to prove that the inflammation passes into the uterine canal and thence to the tubes, except in such cases where the process is due to gonorrhœa.

The prognosis as to the result to be gained by local treatment is doubtful in those cases due to gonorrhœa, in those cases where the pelvic inflammation is of long standing without reference to the cause and in those with a history of frequently recurring attacks. In cases which can secure every attention, a cure by local treatment can sometimes be effected, but a long time is required. In cases which have to gain their own living, we may seriously consider the advisability of an operation after having gained the consent of the patient after a true representation of the operation and its results. We should enter a protest and the profession should demand a recognition of the responsibility of those who are indiscriminately operating for the removal of tubes and ovaries. It requires an expert to determine when the operation is necessary, and still more experience and skill to do it with safety to the patient. It should only be done as a last resort after other measures have failed. In a number of cases in private practice I have succeeded in restoring the patient to health by local treatment, for whom the operation had been strongly urged. If we could get accurate statistics I think that it would be shown that the average amount of benefit gained does not compensate for the amount of risk. I believe that the operation is done too often even by those who have the least death-rate. I predict that five years will not pass before it will be almost necessary to offer an apology when this operation is proposed.

Dr. Robert Battey, of Rome, Ga.: From my experience it has seemed to me that the pelvic cellulitis which gives so much trouble was in a large proportion of these cases secondary. So far as disease affecting the tubes is concerned, I believe that if we throw out of consideration gonorrhœal cases, the primary disease starts in the ovary. I regard most of these serious inflammations of the pelvic cellular tissue as dependent upon cystic or cirrhotic disease of the ovary. With reference to the frequency with which this operation is done, I must confess that I am largely in sympathy with the speaker. I think that the operation is done too often. I do not believe that every case of organic disease of the ovary requires operation.

In reply to a question of Dr. Fordyce Barker asking him to state the grounds on which he would advise removal of the tubes and ovaries, Dr. Battey said, that every case must be determined for itself. If I had a poor miserable patient without the means of comfortable subsistence, suffering with ovarian or tubular disease, I would operate. If I could put such a patient under suitable surroundings and under a prolonged course of treatment, I might not think of the knife, but we have to look at the cases as they exist. I do not require in my cases an absolute diagnosis of disease of the tubes or ovaries prior to operation. It is sufficient for me to know that the general health is broken down by reason of the perverted function of her ovaries, that she is utterly miserable, that there is no reasonable hope of restoration to health by other means and that there is a reasonable prospect of restoration by removal of the ovaries. Under such circumstances I unhesitatingly operate and contrary to my former view, I do find that the ovaries are diseased.

Dr. R. Stansbury Sutton: I believe that when the ovary is diseased and can not be cured by ordinary means, when it is interfering with the health of the woman and her duties in life, it should be removed. If the ovary is diseased and is a burden to the woman, it is as much the duty of the surgeon to remove that ovary as it is to remove a diseased eyeball. I agree that the operation is being done too often; not, however by competent men, but by incompetent men. The conditions which require the operation are not always clearly understood before the abdomen is opened. I do not believe that a man is compelled to be positively certain of what he is going to find before operating. The speaker then presented several specimens and described the cases from which they were removed.

Dr. T. C. Busey, of Washington: I think that if pathologists will return to the histological basis, there will not be the difference of opinions which now exists. I believe that it is now held that the cellular tissue is really a vast lymphatic stricture and that the peritoneum is a large lymphatic sac. Instead of discussing nice distinctions between pelvic cellulitis and pelvic peritonitis, it would be better to classify as pelvic lympangitis, these different varieties.

Dr. J. Scott: I might mention some of the cases bearing upon this point which I have seen. One was a patient supposed to have fibroid tumors. The ab-

domen was opened and both ovaries found to contain pus. They were removed and patient recovered. In a second case the patient presented a tumor in the right side. The temperature record was kept for two months, during which time it did not vary half a degree. On opening the abdomen, the ovary was found to contain ten ounces of pus. The right ovary was removed, but the left appeared to be healthy and was left in position. During the operation the bladder was opened. This was sutured and the patient made a good recovery. Five weeks later the patient complained of pain in the left side and on examination, I found an enlarged left ovary. This was removed and the patient promptly recovered. In a somewhat similar case, one ovary was removed. In a short time the other enlarged, but the operation was postponed and the woman died of rupture of the abscess.

DR. MATTHEW D. MANN, of Buffalo: I wish to allude to the possibility of one tube and ovary being diseased without involvement of the other. There is no reason why it should be so. I have in several cases where the disease appeared to be limited to one side, removed but one ovary and the result has been a perfect cure. This operation avoids some of the objections urged against the removal of both ovaries.

DR. H. P. C. WILSON: I believe that where there is a general cellulitis, there is more or less pelvic peritonitis. These two affections are often associated. In the early stages, the inflammation is often controlled by active treatment. If it is not controlled, it may go on to the formation of abscess. The pus may be discharged and the patient recover. Occasionally the abscess occurs in the tube or ovary and these are the cases in which laparotomy is often called for. I agree that the operation is done too frequently. The point which Dr. Mann has raised that it is not always necessary to remove both ovaries is a very important one.

DR. JOHN C. REEVE, of Dayton, Ohio, reported a

CASE OF ABDOMINAL SECTION FOR CHRONIC SUPERATIVE PERITONITIS.

A. D., aged 19, living as if married, was healthy until November last. She had never been pregnant. She was attended by a physician who found abdominal inflammation. On January 18th, she was seen in consultation by the speaker, at which time she presented the evidences of chronic peritonitis, but no history of a gonorrhœal origin could be obtained. One month later she began to pass pus by the rectum. After other measures of relief had failed, laparotomy was offered in April, but declined. The patient was not seen again until June 20th, when she desired the operation, as she had suffered with hectic. The menstruation had ceased since January and examination of the urine showed no albumen. There was great tenderness and hardness all over the abdomen, pus being still passed with the stools. By vaginal examination, no definite hardness could be detected. By the rectum there was ill-defined resonance high up on the left side. No opening into the rectum could be detected, although frequent examinations for this purpose were made. The patient was greatly emaciated, the weight having fallen from 125 pounds to seventy pounds.

The operation was performed June 23, there was great difficulty in the administration of the ether. On opening the peritoneum, all the parts were matted together. The abdomen was washed out by allowing water to run into it from a pipe and then syringing out what remained. Finally a cavity was reached in the left lumbar region. It was impossible to attach the walls of this cavity to the abdominal wound and as the condition of the patient was by this time alarming, a drainage tube was introduced and the abdominal incision closed with sutures. In the course of several hours, the patient gradually rallied from the operation. The temperature did not go above 100. The cavity was washed out with a solution of iodine in tincture in water. The upper two-thirds of the abdominal wound failed to unite. On the fourteenth day a large quantity of fecal matter came through the wound. This has continued to recur. In July, evidences of Bright's disease were detected. Since then there has been some improvement in the general health. I think that if the patient had consented to the operation when first proposed, the result might have been different. One of the principal objects of the paper has been to ascertain if, as has been stated, fecal fistula is an invariable consequence of laparotomy for abdominal inflammation in cases where pus has already escaped by the rectum.

DR. J. SCOTT: I would mention the following case: A patient was admitted to the hospital with prolapse, inflammation of the ovaries and cellulitis. After three months' treatment without improvement, removal of the ovaries was recommended, but declined by the patient. The patient was kept under treatment for six months longer, when enlargement of the right ovary began. Later pus discharged by the rectum and subsequently the abscess opened into the bladder. The patient then consented to operation. The abdomen was opened, an opening made into the vagina and a drainage tube introduced. The improvement was not marked and in the course of two months the patient was as bad as ever. The removal of both ovaries and tubes was then performed. Four or five days after the operation fæces appeared in the wound. During the five months succeeding the operation, the fecal fistula has closed, the patient has gained ten pounds and is able to walk about.

DR. WILLIAM GOODELL, of Philadelphia: The only case which I have had at all similar to the one reported was one of pelvic abscess opening into the rectum and bladder. I performed laparotomy with the intention of opening the abscess and stitching its walls to the abdominal wound. The abscess had been so constantly drained, that it was not larger than a pear. By compressing the abscess sac, I was able to make it prominent in the vagina, and forced into it a closed pair of scissors, which were then opened and the opening gradually enlarged, and a drainage tube inserted. This case gradually recovered, both the rectal and vesical openings closing in the course of time.

DR. C. C. LEE, of New York: I think that the rule will come to be established that in chronic suppurative peritonitis, laparatomy is not only justified, but the procedure to be adopted.

DR. R. S. SUTTON: In a case of pelvic abscess as large as a cocoanut, I performed laparatomy and then stitched the peritoneum at the edge of the incision to the peritoneum covering the abscess, which was then opened and a drainage tube introduced. The patient recovered.

DR. J. TABER JOHNSON, of Washington: I would suggest that in such cases as the one described by the author, where time is a matter of importance, much can be gained by adopting the procedure employed by Drs. Bantock and Tait. In washing out the abdominal cavity they pour the water into the cavity with a pitcher, using gallons at a time. In this way the cleansing is rapidly accomplished.

WEDNESDAY, SEPTEMBER 22, SECOND DAY.

MORNING SESSION.

DR. JOHN GOODMAN, of Louisville, Ky., read through the Secretary, a paper on

ERGOT AFTER LABOR.

The administration of a full dose of ergot immediately after the completion of labor has become a general practice. It is claimed that it promotes involution, prevents after pains and tends to prevent post-partum hæmorrhage. Some years ago the author administered a full dose of ergot after a perfectly normal labor. In fifteen minutes, severe pain appeared and increased. The tenderness in the uterus continued for a week. There was no milk and the patient, previously prolific, never again conceived. The trouble was attributed to inflammation of the muscular coat of the uterus produced by the action of the ergot. In a second case treated in May, 1886, ergot was given after a forceps delivery. On the seventh day the patient had a chill followed by a temperature of 104. The next day a clot was washed out of the uterus and the temperature fell to 99. Well marked septicæmia developed and the patient died one week later. In this case the retention of the clot was attributed to the spasmodic contraction of the uterus preventing its escape. The author had seen other cases in which injurious effects were produced by the administration of ergot.

Dr. Goodman claimed that ergot did not assist involution, which was a natural process and required a certain length of time for its completion. That we have in ergot a remedy capable of arresting after-pains, can not be doubted, but it does so by exciting a mode of muscular action at variance with all physiological laws. After-pains are conservative and it is better to wait until they become of abnormal severity before resorting to treatment. Ergot is capable of preventing hæmorrhage, but its use is attended with such dangers that it should not be employed except under exceptional circumstances. It should be an inviolable rule not to give ergot at the close of the third stage of labor, unless hæmorrhage is imminent. It should then be used by hypodermic injection.

THE PRESIDENT: I have in process of preparation a paper in which I enter my protest against routine practice of the administration of ergot after the third stage of labor. This conclusion is based upon my experience and upon a study of the action which is claimed for the drug. The contractions produced by ergot are unlike those of nature. The contraction of ergot is persistent, while the normal contraction is intermittent. If the contraction is persistent, the circulation of the uterine wall can not reach a healthy state, and thus the process of it not only retains what is in the uterine cavity, but it interferes with the process of involution and lays the foundation for sepsis and inflammation. I think that in the course of the next five or ten years, the practice of obstetricians in this matter will be revolutionized.

DR. WILLIAM GOODELL: The author of the paper states that it is only since last May that he has given up the use of ergot. I think that he has not had sufficient time to form such positive opinions. In the first case, I think that there must have been a fibroid tumor. The second case was a clear instance of septicæmia. I do not think that after-pains are conservative, as a rule we do not see them in primipara. These pains are in a great measure the result of weakness induced by civilization. I do not believe that every woman who has given birth to a child needs ergot, but we do not know the cases which do require it. In twenty-five hundred cases of labor, I have always given ergot after the completion of labor and I have never seen any harm from its use. I do not believe that one dose of ergot has much effect in favoring involution. Involution is the result of fatty degeneration, and the greater the contraction, the greater the interference with the circulation the more rapidly should this change take place. I have used ergot for two purposes, one was to prevent hæmorrhage and the other to prevent the absorption of septic matter. Since the introduction of antiseptics, which I think should be used in every case of labor whether public or private, the use of ergot to prevent septic infection is not so important. I think that it does not do the harm which has been mentioned.

DR. GEORGE J. ENGELMANN: I hold in the main the views which the President has expressed. I use ergot much less than I did a few years ago. I believe that we have equally effective measures in the hot antiseptic douche and in the faradaic current. After the contents of the uterus have been expelled ergot will in certain cases always be a useful and effective remedy. I would not venture to say that after labor ergot is out of place, but I think that I may say that before the contents of the uterus are expelled, it should not be used at all.

DR. THEOPHILUS PARVIN, of Philadelphia: The effect of ergot varies with the dose. A small dose acts simply to increase the normal uterine contractions. I must object to the assertion that ergot should never be given before the completion of labor. Statistics show that those who are most successful in the treatment of placenta prævia are the men who use ergot. Again, in a multipara with the os dilated,

where a sudden rupture of the membranes has taken place with a cessation of labor, 15 or 20 grains of ergot causes a rapid completion of the labor. After a protracted labor, there is a weariness of the uterus and a failure to enter upon the normal retraction which is a preventive of hæmorrhage and tends to promote involution. As long as in the third stage of labor we assist nature in the expulsion of the placenta, why should we not assist nature in securing normal retraction of the uterus after the completion of the third stage. In some experiments which I made at the Philadelphia Hospital, to determine the rapidity of involution of the uterus in women who had received ergot and in those who had not, it was found that in those who received ergot after delivery, uterine involution seemed to take place more rapidly.

DR ALEXANDER J. C. SKENE, of Brooklyn: I do not think that in the cases reported, the ergot had anything to do with the production of the effects. All rational men use ergot as any other remedy, when it is necessary or may possibly become necessary. If there is any doubt whether or not it is needed, it is better to give the patient the benefit of the doubt.

DR. P. C. WILLIAMS, of Baltimore: I have never yet regretted the use of ergot in any case, but I have regretted not using it. The great danger under the use of anæsthetics is hæmorrhage. To avoid this the use of ergot seems to be the proper thing. I admit that ergot is abused, but the abuse of ergot is no argument against its proper use.

THE PRESIDENT: The profession is not taught that ergot should be given in diseased conditions, but that it shall be given in all cases after labor as a routine practice, and it is only against this use of it that I raise my voice.

DR. THADDEUS A. REAMY, of Cincinnati, then delivered

THE PRESIDENT'S ADDRESS.

He first referred to the prosperity of the Society during the past ten years, and spoke of the great advance of abdominal surgery and ovariotomy during the same time. The speaker thought that the less satisfactory results obtained in America as compared with other countries might be due to climatic and constitutional conditions and to the fact that the operation was performed by too many operators. The operation of removal of the ovaries for beginning cystic troubles and for other conditions is performed in many cases which could be relieved by other and less serious measures. The practice of leaving the undiseased ovary was recommended. The success of ovariotomy has led to the performance of laparotomy in other conditions, as suppurative peritonitis, with satisfactory results.

The use of electricity as a therapeutic agent is attracting much attention. It is the safest and most effective remedy in extra-uterine pregnancy, and it is coming into use in many other conditions.

The treatment of extensive fibroid disease was next taken up. Medical treatment is, in the main, unsatisfactory, although in some cases, good results have followed the use of ergot and electricity, especially the latter, which is perhaps the most effective therapeutic agent in these cases. The operation of hysterectomy should not, as a rule, be performed in these cases. Spaying has met with more favor and success than any other surgical procedure. There are a few cases where on account of the large size of the tumor or its fibro-cystic character, hysterectomy probably affords the best hope.

Pelvic deformities as influencing labor were next considered. In the lesser degrees, premature labor, with the use of appropriate forceps applied with proper skill were recommended. With reference to operative procedures, the mortality in the United States has been very great. An important reason for this is the failure to recognize the importance of early interference. It has also been shown that, other things being equal, the danger is increased by doing the operation after the death of the child.

Total extirpation of the uterus for cancer has been steadily growing in favor. So far as the speaker had examined the clinical proof the evidence as to its utility had not been convincing. While patients have recovered from the operation, it is not yet proven that the operation is justifiable, except where the disease is confined to the body of the uterus or the cervix and the vagina is free. While the view that epithelioma of the cervix is due to traumatism is not generally accepted, he believed that traumatism of the cervix was conducive to the development of epithelioma. If for no other reason, Emmet's operation is warranted on the sole ground of a preventive.

The speaker in referring to the *uterine curette* stated that he had recently had alarming symptoms following its use, and in one case where the instrument was used immediately after dilatation with sponge tents, death resulted. Peritonitis had not been developed in a single case where the dilatation had not immediately preceded the operation. Rapid dilatation is alleged to be comparatively free from the dangers attendant upon the use of tents, but he has recently had a high degree of peritonitis following dilatation by this method where the curette was not used.

The following case was then described: A married woman aged 32, the mother of two children, had suffered with severe menorrhagia during the past year. There was an old laceration of the perineum, but no laceration of the cervix. The uterus measured 3¼ inches and was not tender. No pelvic tenderness could be detected. Treatment directed to the general condition was ordered, and under it the anæmia improved and menorrhagia decreased. Some months later the blunt curette was used with the woman in the lithotomy position. No dilatation was required. A large amount of the fungous tissue was removed from the posterior wall and the curette was then passed over the anterior wall. During the manipulation, no roughness being employed, the instrument passed through the uterine wall. It was at once withdrawn, and a sound being introduced, it readily passed its whole length and its extremity could be felt externally above the umbilicus. Forty drops of laudanum was administered by the rectum and an ice bag was placed over the abdomen. The ice bag was kept on continually for five days. The

accident caused no symptoms whatever. The perineum was subsequently restored and the woman's health is much improved. The menorrhagia has disappeared.

In concluding the President referred to the proposition looking to the organization of a Congress of American Physicians and Surgeons, and hoped that the action of the Society would be favorable to such an alliance.

Dr. Fordyce Barker, of New York, read a paper on

THE INFLUENCE OF MENTAL INPRESSIONS ON THE FŒTUS.

The belief that maternal impressions may affect the nutrition and development of the fœtus *in utero* has existed from the earliest periods of which there are any records. Medical writers with hardly an exception down to the beginning of the eighteenth century, express the belief with more or less distinctness that fœtal marks and deformities are due to the emotions, desires or shocks of the pregnant mother. Reference was then made to numerous papers written within the past twenty years in which this theory was strongly controverted. Those who disbelieve in this doctrine base their skepticism on what they regard as physiological reasoning, and chiefly on the assertion that there is no direct nerve connection between the maternal and fœtal systems. Deformities, they urge, are due to arrest of development; but no one has brought forward sound physiological reasons why this arrest of development may not have been caused by mental impressions affecting the fœtal nutrition by their influence on the maternal blood. Extremely rare as is the occurrence of cases which prove the result of this influence, he considered the fact is so well proved by sufficient authentic evidence as to make it as certain as any other fact which cannot be explained by science. The term "mental impressions" should include those which have a physical as well as a psychical origin. Five cases coming under the author's observation were described.

Case 1 was that of a young lady who at the age of 18 had for the first time been taken to the theatre and had seen Sothern, the actor, play "Lord Dundreary." From this time she spent her whole time in writing to Lord Dundreary and she thought and talked of nothing else. This continued for several months, and under treatment and change of scene, gradually wore away. She subsequently married, and four years after her attack of insanity, her first child, a boy, was born. As the child became able to talk he exhibited peculiarities resembling those of Lord Dundreary. He walked with a little skip, had a slight stammer in his speech, and his left brow was drawn down with the lids practically closed.

Case 2 was that of a lady, a typical brunette, who was first married to a gentleman, a typical blonde. She was never pregnant by him. Subsequent to his death she married a gentleman as marked a brunette as herself. Her first child was a decided blonde. Both her own and her husband's relatives are all brunettes. The lady has since had three children, all brunettes.

Case 3 was that of a lady who during the first month of pregnancy had been much worried over her oldest daughter, who had had her ears bored for rings. The ears became inflamed and caused much trouble. When the child was born, both ears presented the appearance of having been pierced for rings, and through at least one of the lobes, a thread could be passed.

Case 4 was that of a lady who at a very early period of pregnancy was much impressed by seeing three ladies, all of whom had hare-lips. When her child was born it had a double hare lip.

Case 5. Mrs. X., married but a few weeks, was at the theatre with her husband. Something vexing him, he placed the point of his elbow on her hand and held it so firmly that she could not draw it away. Not wishing to make a scene, she bore it until she fainted. The fingers were much swollen and painful for several days. She never lived with her husband afterward. Thirty-five weeks and three days after the theatre incident, she gave birth to a son. On the left hand, the first and second phalanges of all the fingers and thumb were absent, looking as if they had been amputated. During her pregnancy, she had never thought that her child would be born with any deficiency.

Dr. Wm. Goodell: I have been very skeptical on this subject, but I have seen one case which seems to bear out the theory. A physician was called upon to assist at the operation of circumcision. His wife, who was in the early months of pregnancy, was much interested in the operation and insisted upon having all the details. The operation occupied much of her thoughts. When her child was born, a boy, it was found that the glans was exposed, the prepuce well retracted with granulation edges, showing an appearance very similar to that of a recent circumcision. I have recently seen an almost identical condition in a child, which could not be accounted for by any impression on the mind of the mother.

Dr. Samuel C. Busey: While I have no positive convictions to present, I believe that there is some relation between mental impressions and fœtal deformities. Any prevalent and concurrent belief must be based upon an element of truth. This belief has prevailed since the time of Jacob. In the physical world there is no effect without a cause and in the world of life the rule is the same. If we can demonstrate in any single instance connection between the deformity and the mental impression, we must concede that such a thing can again occur. Dr. Barker has cited some instances and Dr. Goodell has given another case. In still another case the mother while pregnant saw a man with an opening in his trachea from which a tracheotomy tube had been removed. The child when born exhibited a depression in the same position. Another case is reported where the mother received two distinct impressions and the child was born with two distinct deformities corresponding to the separate impressions received. In another case, the father had removed, in the presence of the mother, a metacarpal bone of one of the fingers. When the child was born it exhibited a corresponding deformity. A consideration of these

cases can bring us to but one conclusion. The earlier in pregnancy the impression occurs the more frequently does the deformity follow and the greater is the correspondence between cause and effect.

The discussion was then postponed until the afternoon session.

AFTERNOON SESSION.

DR. FORDYCE BARKER, of New York: In all the cases I have reported there is no evidence that the period since conception had been more than six weeks. I have rejected all cases in which conception occurred three or four months before the mental impression was produced.

DR. JOHN BYRNE, of Brooklyn, read a paper on

THE TREATMENT OF PROCIDENTIA UTERI BY GALVANO-CAUTERY.

In February, 1872, Mrs. H., the mother of four children, presented herself with the entire womb and vesico-vaginal wall protruding. She was 35 years of age. The cervix was ulcerated from the friction. She was treated by applications of glycerole of tannin and irrigation for two months. The cervix was then removed with the galvano-cautery loop. The patient recovered without a symptom. Five weeks later, there was no bulging of the vesico-vaginal septum and the uterus could just be reached with the finger. No reasonable amount of force by means of a vulsella forceps could draw it down. The patient was discharged cured and has continued well.

The whole number of cases treated with the galvano-cautery has been nine, but in three only has the cervix been removed. In six of the cases, linear cauterizations were required.

Case 2 was a patient with procidentia who had been treated with pessaries for a long time. The cervix appeared to be healthy. A double tenaculum was introduced into the cervical canal and the whole mass pushed into the pelvic cavity and lifted to show the line of vaginal insertion. A groove sufficiently deep to admit the loop was then cut around the cervix close to the vaginal vault. The hot loop was then adjusted and the cervix cut through to the depth of one-fourth of an inch. The wire was then removed and tampons of glycerole of tannin inserted. Two weeks after operation, the uterus resisted all reasonable efforts to depress it. Two years after operation no perceptible change was observed. The health had never been better and menstruation was regular.

In *Case 3* the parts were returned and the line of vaginal insertion marked in spots with the cautery knife. The entire mass was then drawn down and a deep fissure three-eighths of an inch in depth made along the circumference of the cervix. Then three incisions were made in the vagina, one central and the others diverging, and the whole mass was then returned. The recovery was complete. In none of the cases has there been any peritonitis of any account. The speaker highly recommended further trial of the galvano-cautery in these cases.

DR. GEORGE J. ENGELMANN, of St. Louis, read a paper on

ELECTRICITY IN GYNÆCOLOGICAL PRACTICE.

After referring to the confusion which had surrounded this subject he referred to the following points which should govern the use of electricity as a therapeutic agent: The formation of strict indications for the use of the galvanic and faradic currents, a differentiation between the varying forms and modifications of the galvanic and faradic currents, differentiation between the active and indifferent poles, the localization and concentration of the current, the precision of the dose, the use of stronger currents continued for a short time. He has used the galvanic or faradic current in the reduction of the size of neoplasms, fibrous polypi, cystic growths and urethral caruncles; also in chronic pelvic inflammation, in chronic ovarian inflammation, in stenosis of the os, for the relief of the engorgement accompanying subinvolution, in prolapse when due to relaxation of the tissues. It is an aid in the correction of various forms of displacement, in metrorrhagia when due to inflammation and relaxation, in certain forms of amenorrhœa and for the relief of many annoying reflex symptoms. In obstetrics it is useful in uterine inertia during or after labor, in cases of weak and irregular labor pains, in post-partum hæmorrhage, in delayed involution, in paralysis of the urethra or bladder after labor and in the interruption of extra-uterine pregnancy.

The only contraindication to the use of electricity is the presence of severe acute inflammation. It may be used in sub-acute inflammation. In the more acute pelvic inflammations care is required in its use.

A number of cases were then referred to showing the beneficial effect of electricity in diminishing the size of fibroid tumors and in other conditions.

At the business meeting the following were elected

OFFICERS FOR THE ENSUING YEAR:

President—Dr. A. J. C. Skene, of Brooklyn.

Vice-Presidents—Dr. John C. Reeve, of Dayton, O., and Dr. Elwood Wilson, of Philadelphia.

Secretary—Dr. Joseph Taber Johnson, of Washington.

Treasurer—Dr. Matthew D. Mann, of Buffalo.

Council, additional members of—Drs. W. H. Baker, of Boston, C. C. Lee, of New York, T. M. Drysdale, of Philadelphia, and A. Reeves Jackson, of Chicago.

NEW MEMBERS.

Drs. Charles M. Green, of Boston, A. F. A. King, of Washington, E. C. Dudley, of Chicago, A. W. Johnstone, of Danville, Ky., J. E. Janvrin, of New York, H. Marion Sims, of New York, B. F. Baer, of Philadelphia, and W. Gill Wylie, of New York.

It was decided to hold the next meeting in New York, beginning September 15, 1887.

A communication with reference to the organization of a

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

was presented.

DR. JOHN C. REEVE, of Dayton, O., offered the following:

Resolved, That this Society expresses an opinion favorable to the formation of the proposed Congress, but that the committee be instructed not to favor any plan looking towards a surrendering of its distinctive title, character, or to interfere with the full and entire management of its own affairs in every respect.

The following amendments were offered and accepted:

1. That this Society does not favor meetings of the Congress oftener than biennually.

2. That the committee opposes, as far as possible, meetings in the month of June.

Resolution, as amended, adopted.

The committee consists of Drs. Samuel C. Busey, of Washington, Fordyce Barker, of New York, T. A. Emmet, of New York, J. R. Chadwick, of Boston, and Joseph Taber Johnson, of Washington.

Thursday—Third Day.

Morning Session.

Dr. W. H. Baker, of Boston, read a paper on

electrolysis in gynæcological surgery.

The speaker referred more particularly to the use of electrolysis in cases of fibroid tumor. He laid down the following rules for the performance of the operation: It should not be employed within a week before or after menstruation; an anæsthetic should be administered; it is better to use electrolytic needles for both the positive and negative poles; the operator should be absolutely sure of the cleanliness of his needles; the needle should be deeply buried in the tumor in order that the current shall be insulated from the parts outside of the growth; the insertion of the needle should be made at the most prominent part of the growth, whether that is in the vagina or in the abdominal wall; the needles should not be too nearly approximated; if both needles are properly placed the position of the two poles makes no difference; the circuit being completed, the number of cells should be gradually increased from four to twenty or thirty (a more exact means of determining the strength of the current would be the galvanometer, but this had not given him accurate results); the length of time during which the application is continued should be from ten to twenty minutes, and should be determined by the character of the pulse; when the pulse becomes slower and weaker than normal the number of cells should be diminished or the current discontinued; the current should be diminished gradually, and the wires should be disconnected at the battery before the needles are removed; the application should not be made at the surgeon's office; after the application the patient is to be put to bed, where she is to remain for one week.

With such precautions, the speaker had never seen shock after the operation. A single treatment is often all that is necessary. He had never found it necessary to make more than three applications, and the latter number in only one case. There should be an interval of at least from one to three months between each application.

The use of electrolysis is also of service in the treatment of inflammatory effusions. Before resorting to electrolytic puncture the application of the galvanic current should be tried, as it does not require an anæsthetic, and avoids the slight risk which accompanies even small wounds.

The author presented the following conclusions:

1. Electrolysis is a useful agent in the treatment of certain cases of fibroid tumors of the uterine walls and of chronic circumscribed peri-uterine effusion.

2. When applied to fibroid tumors of the uterus, electro-puncture is a most reasonable and efficient method.

3. In the treatment of fibroid tumors by this agency, it is unnecessary to apply it often.

4. Cases of perimetric effusion to be treated by this method should be selected with care, in reference to the absence of all acute symptoms.

Dr. Jas. R. Chadwick, of Boston: I tried electrolysis in one case of fibroid tumor, introducing the needle through the abdominal wall. This caused a smart attack of peritonitis. During the following year there was no decrease in the size of the tumor.

Dr. Geo. J. Engelmann: By puncturing through the vagina and if possible through the tissue of the uterus we avoid the dangers of inflammation which accompany abdominal puncture. I believe that the same results can be accomplished without anæsthesia and with less danger by one electrode in the tissue and concentrating the total effect upon that electrode, by using a large electrode in connection with the other pole.

Dr. James B. Hunter, of New York: My experience with this method of treatment has been limited, but I can not say that I have seen one case of fibroid tumor permanently relieved by electrolysis.

Dr. Matthew D. Mann, of Buffalo: I have employed this agent in one case, plunging one needle into the tumor from behind through Douglas's cul-de-sac, with a sponge electrode over the tumor on the outside. The current was kept up fifteen minutes. Six applications were employed. The size of the tumor much diminished and the tenderness and pain were lessened. The patient is now able to attend to her duties.

Dr. James B. Hunter, of New York, read a paper on

persistent pain after abdominal section.

Pain before operation may be due to various causes. It may be located in the ovaries, when it will be increased by menstruation. Disease of the tubes is a cause of pain in a large number of cases. The pain of peritonitis is of great importance. Acute peritonitis may be limited to the region of the ovaries and tubes, and the pain caused by it may be periodical in character. The presence of adhesions interfering with the mobility of the intestines and other organs is a frequent cause of pain. A severe form of pain may also be caused by displacements of the uterus.

Abdominal section is performed for the relief of pain, and the organ at fault is successfully removed and the patient recovers, but the pain continues. If

there is no marked relief at the expiration of twelve to eighteen months, if the patient has been favorably situated, the operation may be pronounced a failure so far as the patient is concerned. Such pain may be due to former peritonitis, to peritonitis following the operation, or to some defect in the abdominal wall. Peritonitis following the operation is a cause of pain in a certain number of instances. A slight amount of peritonitis often occurs after abdominal section, and it may leave some slight adhesions interfering with the mobility of the viscera. Inflammation in the region of the stump often causes its attachment to the abdominal wall and thus cause pain. Pain may result from defective union of the abdominal incision, allowing a ventral hernia. Pain in the cicatrix may occur, as in other situations.

In the way of prophylaxis, the utmost precaution should be taken to prevent the development of peritonitis. Antiseptic precautions should be adopted. The stump should be tied with aseptic silk. The early and judicious use of drainage and irrigation will go far toward preventing inflammation. The cold coil with antipyrin should be resorted to if there are any indications of peritonitis.

In the treatment of the pain, blisters, vaginal injections and the use of iodine may be resorted to. The internal use of opium is usually demanded. Such treatment can, however, scarcely be expected to cure the pain. Rest in the horizontal position is perhaps better than any medicine. If all palliative measures have been tried, and at the end of twelve or eighteen months there is no improvement, a second operation may be warranted. The dangers of operative procedure and the uncertainty of the operation causing any improvement, must be stated to the patient.

The following conclusions were drawn:

1. All cases of abdominal section done for the relief of pain should be carefully followed up for at least two years, and not counted as cured simply because the operation has not been fatal.

2. Peritonitis following operation is to be dreaded as much for its remote consequences as for its immediate danger.

3. Extreme caution is demanded when the operation is undertaken where there exist the physical signs of chronic peritonitis.

4. Secondary operations, as a rule, are of no value, although occasionally they may afford relief.

5. Where the operation is done for the relief of pain, a guarded prognosis should be given. There are certain chances that a perfect cure will not result, even if the operation itself is entirely successful.

DR. A. J. C. SKENE: Among the causes of pain after laparotomy I would place the ligature. In tying the pedicle after removal of the ovaries, some traction must be made upon the broad ligament and the nerves must be drawn upon. That form of pain may disappear. Another cause of pain is the application of the ligature just tight enough to arrest hæmorrhage without destroying the nerves. I think that we have more pain after the use of the ligature than after the use of the cautery clamp. The cautery as a means of treating the pedicle has never been thoroughly tried in this country.

In regard to what constitutes success after abdominal section, I would say that many of the cases which I have reported as failures have subsequently turned out to be most successful.

DR. W. GILL WYLIE, of New York: With reference to peritonitis, I would say that I regard it as a condition behind which there is some disease. In chronic peritonitis, there is often some cause which keeps renewing the inflammation. In many of the cases that suffer after operation, the pain is due to imperfect operation. Sometimes a small portion of diseased tissue is left. I have taken the precaution to destroy the diseased tissue that may be left beyond the ligature, either by carbolic acid or preferably by Paquelin's cautery. This has lessened the mild attacks of peritonitis. Sometimes the inflammation is centered around a ligature, leading to abscess and the formation of a sinus. In some of these cases the trouble can be cured by dilating the sinus and fishing out the ligature. In many cases the peritonitis is due to the bursting of a small cyst. Again, in cases where there is chronic inflammation of the lining membrane of the uterus this is not always cured by removal of the tubes and ovaries. This may cause pain not only in the uterus, but reflexly in other parts of the body. These pains can often be cured by dilating the uterus and applying carbolic acid.

DR. ROBERT BATTEY, of Georgia: I have had some little experience with the difficulties alluded to by Dr. Hunter. We are all familiar with the neurotic women. As a result of a carious tooth, an intense neuralgia may be set up which may continue for years and not be relieved by the removal of the diseased tooth. This is probably due in an alteration in the nerve tissue itself. The explanation that these pains persisting after abdominal section were due to inflammation and adhesions has been carefully considered by myself, but I have wholly failed to find a satisfactory explanation in this quarter.

The speaker has said that at the end of twelve or eighteen months, we should give up these cases as failures: I would qualify that statement by more than doubling the limit. Some of the cases which were most unsatisfactory at the end of a year have achieved the most gratifying cure by the lapse of time. Among the causes which produce the neurotic condition, I am inclined to rank in the first place, an acquired neurotic habit from long suffering. In looking for causes, I have been much struck by one point, that alluded to by Dr. Skene—that is the use of the ligature, and especially a rather loosely tied ligature. Dr. Skene suggests the use of the cautery and clamp. I formerly used a method which has not been alluded to, and that is the separation of the ovary from its attachments by the écraseur. In these cases I did not have any of these troublesome neuroses, and there was no hæmorrhage. I have seriously been considering a return to this method of treatment.

With regard to treatment by a second opening of the abdomen, I would call attention to the fact that by a simple opening of the abdomen, purely for diagnostic purposes, unaccompanied by any great disturbance of the parts, the condition of the patient is often greatly improved, especially as regards pain.

I think that after removal of the ovaries and tubes, the uterine trouble will get well, but the cure may be hastened by applications to the interior of the uterus of a solution of iodine in carbolic acid.

Dr. H. P. C. Wilson, of Baltimore: I am satisfied that while cases do occur where the pain after laparotomy continues as a result of local adhesions, yet the majority of cases belong to the class of cases described by Dr. Battey where the condition is due more to the neurotic element than to the operation. Most of these are long standing cases where the mental condition has become so morbid that the patient is almost insane on the subject of her ovaries and tubes. Even if these organs are removed, the neurotic condition may remain for a long time. Where the woman has to work and has not time to think of herself, these pains more rapidly disappear than where she is pampered with every luxury. Nothing is so good for the relief of these pains as exercise by walking.

Dr. James B. Hunter: The neurotic condition has been referred to, but I think this is secondary. As regards chronic metritis, I think that usually after removal of the ovaries nothing more is required. I am willing to admit that my limit was too short and should be extended to two or three years. I think that it is not well to expect any improvement after removal of the ovaries and tubes for at least twelve months. I think that it takes that long for the system to become accustomed to the changed condition.

Dr. James R. Chadwick read a paper entitled

THE BLUE DISCOLORATIONS OF THE VAGINAL ENTRANCE AS A DIAGNOSTIC SIGN OF PREGNANCY.

The speaker had tables of 440 cases examined. He had divided the discolorations into four groups: first, doubtful, where it was so faint that he could not be certain of its presence; second, suggestive, where it was more marked; third, characteristic, where the discoloration, though faint, is confined to the anterior wall of the vagina and more particularly to the urethra, just below the meatus and on either side of the meatus. In every instance where this was present the woman was pregnant with one exception; and fourth, marked, where the congestion has become deep and exhibits the appearance constantly seen during pregnancy. He did not claim that the characteristic discoloration is seen in every case, but if carefully looked for, it would be found quite pronounced in the majority of cases. The color varies from a violet to a dark, dusky, almost black color. When present, this sign is of decided value in the early months of pregnancy, but its absence should not be accepted as a positive proof against pregnancy. Cases were cited in which the discoloration had been observed in the seventh or eighth week of pregnancy.

Dr. H. P. C. Wilson: I consider this one of the most valuable means of diagnosing pregnancy in the early stages. It is invaluable in cases where women wish to deceive you.

Dr. A. J. C. Skene: This has seemed to me to be a most reliable sign in the early months of pregnancy. I believe that it is an illustration of the physiological hyperæmia of the formative stage of development.

Dr. Joseph Taber Johnson: Some years ago, I referred to this point, and the discussion which followed seemed to indicate that the discoloration was a congestion produced by interference with the return of the venous circulation by the pressure of the enlarged uterus. It was held that the same discoloration could be produced by any other tumor which would have the same effect as the pregnant uterus.

Dr. William H. Parrish: In regard to the continuance of the discoloration after labor, I have noted that in primiparæ where involution of the vagina takes place completely, the discoloration disappears with corresponding rapidity. Where there is subinvolution, the blueness may continue for a longer time. In multiparous women where the blueness was marked, I have associated it with a condition of subinvolution of the vagina.

Afternoon Session.

Dr. R. Stansbury Sutton exhibited the

SPECIMENS FROM THREE CASES OF SUPRA-VAGINAL HYSTERECTOMY AND MADE SOME GENERAL REMARKS ON THE OPERATION.

Dr. W. Gill Wylie: In many cases of fibroid tumor, however, where hysterectomy has been performed for hæmorrhage, I think that curetting the cavity of the uterus would have obviated the necessity for the operation. With the curette, not only may the hæmorrhage be brought to a normal standard, but I have seen the tumor diminish in size. We meet with some cases, however, in which if hysterectomy is not performed the patient will die as the result of the hæmorrhage.

The President: I think that if Dr. Wylie uses the curette in cases of fibroid tumor, he must, notwithstanding the adoption of all antiseptic precautions, have a certain number of cases of septicæmia. Curetting is much more likely to be followed by septicæmia when there is a fibroid tumor of the uterus than when the operation is done for ordinary fungous granulations.

Dr. Wylie: I have had no trouble whatever. I invariably use antiseptics before the operation and douche out the cavity afterwards. I have never had septic poisoning in any case of curetting in my practice. I use the bichloride solution one to two thousand in the vagina and one to five thousand in the uterus.

Dr. H. P. C. Wilson: Where we have excessive hæmorrhage from a fibroid tumor, I believe that there is no remedy so efficient as the curette. I have never seen any evil results from its use.

Dr. John C. Reeve, of Dayton, Ohio: Have any of the members had any experience with incision of the cervix in the treatment of fibroid tumors? This was highly recommended some years ago.

Dr. Sutton: I have tried division of the cervix and have stopped the hæmorrhage, and have seen rapid fatty degeneration of the tumor occur in one case.

DR. WILLIAM H. PARRISH, of Philadelphia, read a paper on

THE HIGH MORTALITY OF THE RECENT CÆSARIAN OPERATIONS IN THE UNITED STATES, WITH REPORT OF A CASE.

S. M., married, was admitted to the Philadelphia Hospital while in labor, September 20, 1885. She was the mother of two children, the last of which was born twelve years previously. Labor had begun on September 18, the membranes soon rupturing. She was seen by two physicians who had her sent to the hospital. The cord had prolapsed and the pulsations ceased before she was sent to the hospital. On admission she was found much exhausted with the cord protruding from the vagina. The resident physician not recognizing the gravity of the case, Dr. Parrish was not summoned until some hours after her admission. At this time the uterus was in a tonic spasm; the patient was etherized. The vaginal examination revealed merely a rigid condition of the cervix. The pelvic canal was roomy. The hand was introduced into the vagina and two fingers into the uterus. This examination showed two hard intramural fibroid tumours about the internal os. The author concluded that Cæsarean section should be performed without delay and three of his colleagues were sent for in consultation. They all agreed that attempts at enucleation should not be made, but they did not agree as to the necessity of Cæsarean section. They were in favor of craniotomy. The skull was perforated, but it was found impossible to grasp and crush the head. Various instruments were tried without avail. The necessity for Cæsarean section was then conceded by all. The uterus had then been emptied of its waters for at least forty hours. The vagina and lower part of the uterus were washed out with a solution of corrosive sublimate. The cervix was closed by tying around it a rubber drainage tube. The abdomen was opened and the section of the uterus made. At once a very offensive gas escaped. A large child was removed. The placenta was not in line of the incision. Antiseptic precautions were employed during the operation. Deep and superficial sutures were introduced into the uterus and the abdominal incision closed. A hypodermic injection of ergotin was at once administered. After the operation the tube around the neck was removed. The patient died twelve hours later from exhaustion and rapidly developing septicæmia.

At the autopsy the lips of the uterine incision were found in contact. Three dense intra-mural fibroid tumors were found.

Dr. Parrish then referred to the great mortality of this operation in the United States, and presented the statistics of Dr. Robert P. Harris, of Philadelphia. The following rules were then given for the performance of the operation.

1. Carefully determine the degree of obstruction and operate early in labor, as soon as the os is sufficiently dilated to permit drainage, and before the rupture of the membranes.

2. Operate with full antiseptic precautions, but the spray over the abdomen is unnecessary.

3. Control hæmorrhage by compression of the cervix either with a rubber tube or manually, preferably by the latter means.

4. Introduce numerous deep and superficial sutures so as to approximate accurately the muscular walls of the uterus, but do not carry the sutures into the endometrium. Removal of a section of the muscular wall is unnecessary.

5. Protect the peritoneum from the discharges, and if it become soiled, it should be carefully cleansed.

6. Ergotin should be administered at the beginning of the operation.

THE PRESIDENT: In three thousand cases of labor I have never made a Cæsarean section nor any of its modifications. It is only now that the people are coming to recognize that craniotomy is not to be performed in any but the rarest instances, and that the sacrifice of life is unjustifiable. The explanation of the better results in other countries is not so much in the skill of the operators as in the condition of the cases when operated upon.

DR. PARRISH: I agree with the president that craniotomy should be an operation of exceeding rarity. The people are not yet ready in this country to accept Cæsarean section, but one of the great troubles is with the general medical profession who regard this as an operation almost necessarily fatal.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, Oct. 20, 1886.

E. J. DOERING, M.D., PRESIDENT, IN THE CHAIR.

DR. CHARLES WARRINGTON EARLE entertained the Society with a very interesting account of his recent trip abroad, referring more particularly to observations made in the

HOSPITALS OF PARIS AND THE LABORATORY OF M. PASTEUR.

He first visited the Hospital Lariboisare, which has an outside and inside obstetrical department in which 3500 women were confined last year. This hospital has 875 beds, and the several pavilions are disinfected by carbolic acid, and thoroughly washing everything in them with solution of bichloride of mercury. But the favorite antiseptic is the biniodide of mercury. An interesting feature in this hospital is the contrivance for keeping up the body heat of prematurely born infants. It is a square box so constructed as to prevent the loss of heat, the top of which is covered with glass. In the upper part is placed a thermometer and a little basket with soft clothes, in which lies the baby. In the lower part of the box is an arrangement for the introduction of hot air, either from the heating apparatus of the building, or by heating air by gas or hot water bottles. For infants younger than seven months the temperature is maintained at 100° to 105° F. Between seven and eight months the temperature ranges from 85° to 100° F. The children are fed with breast milk when possible, and are not handled or exposed except when absolutely

necessary. By using this incubator they save a large number of the lives of the prematurely born infants. The Maison de Accouchements is Tarnier's private hospital. Although not a modern hospital, asepsis is aimed at, each patient being isolated and having her own irrigator, the permanganate of potash being the favorite antiseptic. Carbolic acid is sprayed in the wards continually. In turn he visited the Hospitals Bichat, Tenon, and Hôtel Dieu, in all of which the rule is cleanliness and disinfection. Dr. Earle said his most interesting visit was to the dispensary and laboratory of M. Pasteur. The dispensary was smaller than the number of patients demands, and here Pasteur spends his forenoons exercising a supervision over the treatment of the scores of unfortunates who go daily to be inoculated for hydrophobia. Nearly every country on the globe has sent patients here. Dr. Earle then explained the mode of preparing the virus. He said, also, that the majority of scientists on the continent are satisfied that M. Pasteur is honest in his endeavors to prove that he has discovered a cure for hydrophobia, and that they are simply waiting for time to prove if such be the case. They have great confidence in Pasteur, and believe that at the proper time he will announce the truth.

Dr. Charles F. Sinclair read a paper on

THE RELATION OF CERTAIN FORMS OF DEFECTIVE VISION TO HEADACHE IN YOUTH.

He said that the headaches arising from defective vision are very numerous. They possess certain definite characteristics according to the degree and character of the ametropia. Thus, instead of the usual classification, the ophthalmologist might furnish a terminology of his own based upon the condition of the eye. The pain in these cases increases as the errors of refraction become more complicated. A woman had suffered with intensely painful headaches for fifteen years who was found to have mixed astigmatism, and here properly adjusted lenses effected a cure.

It is in childhood and youth especially that these different forms of ametropia manifest themselves in headache. Dr. W. H. Day, of London, however, in his work on the "Nature and Causes of Headache," in which he devotes a lengthy chapter to the headache of childhood and youth, does not mention ametropia as a possible cause.

Nevertheless the eye, among school children, is frequently the cause of all the head trouble. Among American children one form of ametropia is exceedingly common and very disastrous in its effects. It is difficult to detect. It may in certain cases simulate different forms of ametropia, and even normal vision. He referred to a case in which occurs a slight degree of astigmatism under one dioptric.

Maud W., a school girl 14 years old, had suffered with severe headaches. On examination excellent vision was found, but minus lenses improved it and made it normal. After the use of homatropin, however, half a dioptric of hyperopic astigmatism was found, which was corrected and the headache cured.

Emily R., 15 years old, had suffered with constant headache for a year. On examination, .50 D manifest hypermetropia was found, and only this corrected, as patient would not submit to the use of atropia. This patient returned in a few days saying that her headaches were as bad as ever, when homatropin was used and a small degree of hypermetropic astigmatism was found. This being corrected, a cure of the headache was effected.

In another case there were constantly recurring attacks of vertigo and dizziness, together with severe unilateral headache caused by astigmatism, and which properly adjusted cylindrical lenses cured.

These are types of an exceedingly large number of cases where headache can be cured by a weak cylindrical lense. These cases are interesting not only because of their marked consequences, but because of their tendency, in certain cases, to exactly simulate other conditions, and they certainly suggest the advisability, in every case of severe headache, to examine the eye only when under the influence of atropia.

Dr. W. Franklin Coleman said that in an examination of the eyes of pupils in Boston, in eighty-nine cases of defective vision fifty-nine were traceable to over-study. Out of this number twenty-five to fifty per cent. of the cases of headache which occurred were relieved by supplying suitable glasses. Another class of cases in which headache occurs is when there is weakness of the recti muscles. By supplying proper prismatic glasses this weakness may be overcome, and the headache disappears. Other factors in producing headache are improper light and too low desks, thus causing the pupil to strain the eyes. So far as artificial light to read by is concerned, the incandescent electric light is probably the best, as it most nearly resembles sunlight, and is free from heat, dust and flickering.

Dr. F. C. Hotz said he believed the authors of such papers as this often exaggerate the importance of their observations. The result is, patients are often instructed to go to oculists, but do not do so on account of the expense, or for some other reason, and the patient therefore receives no treatment. But he has been surprised to see how few cases of defective vision come to him complaining of headache. He has not found it a prominent symptom. In looking looking over his record of cases he finds a great many cases of astigmatism, hypermetropia, and ametropia, in which the symptoms complained of are difficulty of vision, but not headache. Children often complain of not being able to see the figures on the blackboard, and consult the oculist for that trouble directly. But if a large number of cases of the eyes of children are examined, it will be found that in youth a normal eye is often far-sighted, and yet such persons are able to do the work required. However, in cases of defective vision, accompanied by headache, the defect of vision should be corrected.

Dr. J. E. Colburn related his personal experience with astigmatism, stating that not only had he headaches, but he could not study well, and these difficulties disappeared with the using of proper glasses.

DOMESTIC CORRESPONDENCE

"CHLOROFORM AS AN ANÆSTHETIC."

TO THE EDITOR OF THE JOURNAL:

Dear Sir: THE JOURNAL of September 25, contains an article by T. J. Hutton, M.D., on "Chloroform as an Anæsthetic." Although the vast majority of American surgeons have discarded chloroform, it is not well to allow some statements contained in this paper to pass unchallenged; especially, when coming from a careful practitioner, and based on a large number of observations.

Dr. Hutton states, that "ether could never fill the place of chloroform;" and gives amongst his reasons, "the huge quantity of ether required" to produce anæsthesia, "its louder, all-pervading odor," and "the indefinite time required for etherization." There are good and bad methods of administering ether, and the want of success which is often reported, must be ascribed to a failure in appreciating the fundamental principles, which govern the use of these two agents. It is not safe to compel inhalation of an atmosphere containing more than 4 per cent. of chloroform, whilst air saturated with ether vapor, can be inhaled with practical impunity. Anæsthesia by any agent, is the production of the lethal effects of that agent, to an extent corresponding with the degree of anæsthesia; and as insensibility deepens, the patient is brought nearer to a possibly fatal termination. It therefore follows, that chloroform should be given largely diluted with air; and ether with the least possible admixture. For these reasons, a good chloroformist is generally a bad etherist, and *vice versa*. To fulfil the foregoing indications, the best apparatus for use with chloroform, is Dr. Hutton's "rag," which is safer than any mechanical appliance. Where ether is employed, the conditions are so opposite, that for efficient administration, an inhaler is absolutely necessary. I lay down this proposition, because I do not intend to take the results obtained with paper cones, towels and sponges, napkins, etc., which support Dr. Hutton's position; but those where a good instrument delivers concentrated ether vapor, without appreciable waste by diffusion. Under these circumstances, the average time required to produce anæsthesia will be two minutes, and the average quantity of ether employed 1 oz.; the amount consumed in maintaining anæsthesia for thirty minutes, under 3 oz. The odor during the operation is perceptible, nothing more. After some years experience in Hospital, and private practice, I have failed to meet with a case which I could not anæsthetize. There are several instruments which will give these results; with some the quantity of ether varies, but is always under 2 ozs. Professor Müller, of Philadelphia, reports an administration with insensibility in thirty seconds, I have succeeded in obtaining unconsciousness in forty seconds. Would any careful physician attempt to do that with chloroform? I hope not. Having gone over this subject so many times, I do not care to occupy space by recapitulating what can be found elsewhere; and will only add that these statements can be proved from good authority, or demonstrated at any time.

"Finally, as to safety, *the greatest of all considerations*," (the italics are mine). Dr. Hutton has never seen ill results from chloroform, in about 3000 cases. Elsewhere there has been 7000 consecutive administrations without a death; but deaths have occurred, and the average by the latest statistics is enormously in favor of ether. This is not alone sufficient, for a much more important fact, which seems often to be lost sight of, should be emphasized. The doctor, in enumerating the "limitations" under which he uses chloroform, says: "Fourthly, with one hand I administer the chloroform, and with the other I hold the pulse. Any change is instantly noted and I act accordingly—desist or push to completion." If anyone will carefully read the list of chloroform fatalities, recorded in Professor Lyman's work on anæsthetics, he will be struck by the fact, that in many cases the only change noticed was from life to death. Without any previous warning the heart's action has ceased, and efforts at resuscitation have been fruitless. I do not think that any similar case will be found where ether was used.

Care and experience are essential in administering chloroform, but such men as Snow, Clover, and Simpson, have reported deaths; and I am fully convinced that in comparing fatalities from ether and chloroform, we are safe in concluding in the majority of cases, that where ether was used the administrator was to blame, while with chloroform the anæsthetic is culpable. Yours truly, JAS. H. PARKINSON, L.R.C.S.

Sacramento, Cal., October 4, 1886.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 2, 1886, TO OCTOBER 8, 1886.

Major Jos. R. Gihon, Surgeon, granted two months' leave of absence, from Sept. 25, 1886., on surgeon's certificate of disability, in lieu of the unexpired portion of the ordinary leave of absence granted him in S. O. 158, A. G. O., July 10, 1886. (S. O. 227, A. G. O., Sept. 30, 1886.)

Major Wm. H. Gardner, Surgeon, ordered from Dept. Texas to Dept. of the East. (S. O. 227, A. G. O., Sept. 30, 1886.)

Capt. Washington Matthews, Asst. Surgeon, granted leave of absence for one month and twelve days, with permission to go beyond sea. (S. O. 232, A. G. O., Oct. 6, 1886.)

First Lieut. W. W. R. Fisher, Asst. Surgeon, leave of absence extended one month. (S. O. 230, A. G. O., Oct. 4, 1886.)

First Lieut. Wm. C. Borden, Asst. Surgeon, relieved from temporary duty at Ft. Bridger, Wyo., and ordered to return to his station, Ft. Douglass, Utah. (S. O. 126, Dept. Platte, Oct. 2, 1886.)

First Lieut. Wm. P. Kendall, Asst. Surgeon, granted leave of absence for one month. (S. O. 81, Div. Pacific, Sept. 24, 1886.)

Col. John F. Hammond, U. S. Army (retired), died at Poughkeepsie, N. Y., Sept. 29, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING OCTOBER 9, 1886.

Suddards, James, U. S. N., Medical Director, will convene Medical Board, Oct. 6, 1886.

Browne, J. Mills, U. S. N., Medical Director, ordered to report to President Medical Board Oct. 6, 1886.

Dean, R. C., U. S. N., Medical Director, ordered to report to President Medical Board, Oct. 6, 1886.